

DEVELOPMENT THROUGH THE LIFESPAN, 4/E

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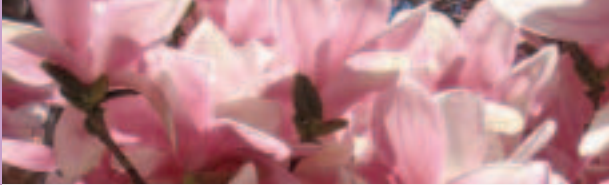
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This mother and infant gaze at each other with mutual delight, suggesting that they have formed a deeply affectionate bond. The baby's sense of trust in his caregivers is fundamental to all aspects of early development.

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Emotional and Social Development in Infancy and Toddlerhood

As Caitlin reached 8 months of age, her parents noticed that she had become more fearful. One evening, when Carolyn and David left her with a babysitter, she wailed when they headed for the door—an experience she had accepted easily a few weeks earlier. Caitlin and Timmy’s caregiver Ginette also observed an increasing wariness of strangers. When Ginette turned to go to another room, both babies dropped their play to crawl after her. And a knock at the door from the mail carrier prompted them to cling to Ginette’s legs and reach out to be picked up.

At the same time, each baby seemed more willful. Removing an object from the hand produced little response at 5 months, but at 8 months Timmy resisted when his mother, Vanessa, took away a table knife he had managed to reach. He burst into angry screams and could not be consoled by the toys she offered in its place.

Monica and Kevin knew little about Grace’s development during her first year, except that she had been deeply loved by her destitute, homeless mother. Separation from her, followed by a long journey to an unfamiliar home, had left Grace in shock. At first she was extremely sad, turning away when Monica or Kevin picked her up. She did not smile for over a week.

But as Grace’s new parents held her close, spoke gently, and satisfied her craving for food, Grace returned their affection. Two weeks after her arrival, her despondency gave way to a sunny, easygoing disposition. She burst into a wide grin, reached out at the sight of Monica and Kevin, and laughed at her brother Eli’s funny faces. As her second birthday approached, she pointed to herself, exclaiming “Gwace!” and laid claim to treasured possessions. “Gwace’s chicken!” she would announce at mealtimes, sucking the marrow from the drumstick, a practice she brought with her from Cambodia.

Taken together, Caitlin’s, Timmy’s, and Grace’s reactions reflect two related aspects of personality development during the first two years: close ties to others and a sense of self. We begin with Erikson’s psychosocial theory, which provides an overview of personality development during infancy and toddlerhood. Then we chart the course of emotional development. As we do so, we will discover why fear and



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Chapter 6

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anger became more apparent in Caitlin's and Timmy's range of emotions by the end of the first year. Our attention then turns to individual differences in temperament. We will examine biological and environmental contributions to these differences and their consequences for future development.

Next, we take up attachment to the caregiver, the child's first affectionate tie. We will see how the feelings of security that grow out of this important bond provide support for the child's sense of independence and expanding social relationships.

Finally, we focus on early self-development. By the end of toddlerhood, Grace recognized herself in mirrors and photographs, labeled herself as a girl, and showed the beginnings of self-control. "Don't touch!" she instructed herself one day as she resisted the desire to pull a lamp cord out of its socket. Cognitive advances combine with social experiences to produce these changes during the second year.

Erikson's Theory of Infant and Toddler Personality

Our discussion of major theories in Chapter 1 revealed that psychoanalytic theory is no longer in the mainstream of human development research. But one of its lasting contributions is its ability to capture the essence of personality during each period of development. Recall that Sigmund Freud, founder of the psychoanalytic movement, believed that psychological health and maladjustment could be traced to the early years—in particular, to the quality of the child's relationships with parents. Although Freud's preoccupation with the channeling of instincts and his neglect of important experiences beyond infancy and early childhood came to be heavily criticized, the basic outlines of his theory were accepted and elaborated in several subsequent theories. The leader of these neo-Freudian perspectives is Erik Erikson's *psychosocial theory*, also introduced in Chapter 1.

Basic Trust versus Mistrust

Erikson accepted Freud's emphasis on the importance of the parent–infant relationship during feeding, but he expanded and enriched Freud's view. A healthy outcome during infancy, Erikson believed, does not depend on the *amount* of food or oral stimulation offered but rather on the *quality* of caregiving: relieving discomfort promptly and sensitively, holding the infant gently, waiting patiently until the baby has had enough milk, and weaning when the infant shows less interest in breast or bottle.

Erikson recognized that no parent can be perfectly in tune with the baby's needs. Many factors affect parental responsive-

ness—feelings of personal happiness, current life conditions (for example, additional young children in the family), and culturally valued child-rearing practices. But when the *balance of care* is sympathetic and loving, the psychological conflict of the first year—**basic trust versus mistrust**—is resolved on the positive side. The trusting infant expects the world to be good and gratifying, so he feels confident about venturing out and exploring it. The mistrustful baby cannot count on the kindness and compassion of others, so she protects herself by withdrawing from people and things around her.

Autonomy versus Shame and Doubt

With the transition to toddlerhood, Freud viewed toilet training as decisive for psychological health. Although Erikson agreed that the parent's manner of toilet training is important, he viewed it as only one of many influential experiences. The familiar refrains of newly walking, talking toddlers—"No!" "Do it myself!"—reveal that they have entered a period of budding selfhood. They want to decide for themselves not just in toileting but also in other situations. The conflict of toddlerhood, **autonomy versus shame and doubt**, is resolved favorably when parents provide young children with suitable guidance and reasonable choices. A self-confident, secure 2-year-old has been encouraged not only to use the toilet but also to eat with a spoon and to help pick up his toys. His parents do not criticize or attack him when he fails at these new skills. And they meet his assertions of independence with tolerance and understanding. For example, before leaving for the grocery store, they give him an extra five minutes to finish his play and wait patiently while he tries to zip his jacket.

According to Erikson, the parent who is over- or undercontrolling in toileting is likely to be so in other aspects of the toddler's life as well. The outcome is a child who feels forced and shamed or who doubts his ability to control his impulses and act competently on his own.

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According to Erikson, basic trust grows out of the quality of the early caregiving relationship. A parent who relieves the baby's discomfort promptly and holds the baby tenderly, during feeding and at other times, promotes basic trust—the feeling that the world is good and gratifying.

In sum, basic trust and autonomy grow out of warm, sensitive parenting and reasonable expectations for impulse control starting in the second year. If children emerge from the first few years without sufficient trust in caregivers and without a healthy sense of individuality, the seeds are sown for adjustment problems. Adults who have difficulty establishing intimate ties, who are overly dependent on a loved one, or who continually doubt their own ability to meet new challenges may not have fully mastered the tasks of trust and autonomy during infancy and toddlerhood.

Emotional Development

Observe several infants and toddlers, noting the emotions each displays, the cues you rely on to interpret the baby's emotional state, and how caregivers respond. Researchers have conducted many such observations to find out how babies convey their emotions and interpret those of others. They have discovered that emotions play powerful roles in organizing the attainments that Erikson regarded as so important: social relationships, exploration of the environment, and discovery of the self (Frijda, 2000; Halle, 2003; Saarni, Mumme, & Campos, 1998).

Because infants cannot describe their feelings, determining exactly which emotions they are experiencing is a challenge. Although vocalizations and body movements provide some information, facial expressions offer the most reliable cues. Cross-cultural evidence reveals that people around the world associate photographs of different facial expressions with emotions in the same way (Ekman, 2003; Ekman & Friesen, 1972). These findings, which suggest that emotional expressions are built-in social signals, inspired researchers to

analyze infants' facial patterns to determine the range of emotions they display at different ages.

Development of Some Basic Emotions

Basic emotions—happiness, interest, surprise, fear, anger, sadness, and disgust—are universal in humans and other primates, have a long evolutionary history of promoting survival, and can be directly inferred from facial expressions. Do infants come into the world with the ability to express basic emotions? Although signs of some emotions are present, babies' earliest emotional life consists of little more than two global arousal states: attraction to pleasant stimulation and withdrawal from unpleasant stimulation. Only gradually do emotions become clear, well-organized signals (Camras et al., 2003; Fox, 1991).

According to one view, sensitive, contingent caregiver communication, in which parents selectively mirror aspects of the baby's diffuse emotional behavior, helps infants construct discrete emotional expressions that more closely resemble those of adults (Gergely & Watson, 1999). Around 6 months, face, voice, and posture form well-organized signals that vary meaningfully with environmental events. For example, Caitlin typically responded to her parents' playful interaction with a joyful face, pleasant cooing, and a relaxed posture, as if to say, "This is fun!" In contrast, an unresponsive parent often evokes a sad face, fussy vocalizations, and a drooping body (sending the message, "I'm despondent") or an angry face, crying, and "pick-me-up" gestures (as if to say, "Change this unpleasant event!") (Weinberg & Tronick, 1994; Yale et al., 1999). By the middle of the first year, emotional expressions are well-organized and specific and therefore able to tell us a great deal about the infant's internal state.

Four emotions—happiness, anger, sadness, and fear—have received the most research attention. Refer to Table 6.1 for an overview of changes in these emotions and others we will take up in this chapter.

Table 6.1

Milestones of Emotional Development During the First Two Years

| Approximate Age | Milestone |
|-----------------|---|
| Birth | Infants' emotions consist largely of two global arousal states: attraction to pleasant stimulation and withdrawal from unpleasant stimulation. |
| 2–3 months | Infants engage in social smiling and respond in kind to adults' facial expressions. |
| 3–5 months | Laughter at active stimuli emerges. Infants perceive facial expressions as organized patterns and can match the emotion in voices and faces. |
| 6–8 months | Expressions of basic emotions are well-organized and vary meaningfully with environmental events. Infants start to become angry more often and in a wider range of situations. Fear, especially stranger anxiety, begins to rise. Attachment to familiar caregivers is clearly evident, and separation anxiety appears. Infants use familiar caregivers as a secure base for exploration. |
| 8–12 months | Understanding of the meaning of others' emotional expressions improves, and social referencing appears. Infants laugh at subtle elements of surprise. |
| 18–24 months | Self-conscious emotions of shame, embarrassment, guilt, and pride emerge. A vocabulary for talking about feelings develops rapidly, and emotional self-regulation improves. Toddlers appreciate that others' emotional reactions may differ from their own. First signs of empathy appear. |

■ **Happiness.** Happiness—first expressed in blissful smiles and later through exuberant laughter—contributes to many aspects of development. When infants achieve new skills, they smile and laugh, displaying their delight in motor and cognitive mastery. As the smile encourages caregivers to be affectionate and stimulating, the baby smiles even more. Happiness binds parent and baby into a warm, supportive relationship that fosters the infant's developing competences.

During the early weeks, newborn babies smile when full, during REM sleep, and in response to gentle touches and sounds, such as stroking of the skin, rocking, and the mother's soft, high-pitched voice. By the end of the first month, infants smile at interesting sights that are dynamic and eye-catching, such as a bright object jumping suddenly across their field of vision. Between 6 and 10 weeks, the human face evokes a broad grin called the **social smile** (Sroufe & Waters, 1976). These changes in smiling parallel the development of infant perceptual capacities—in particular, babies' increasing sensitivity to visual patterns, including the human face (see Chapter 4).

Laughter, which first occurs around 3 to 4 months, reflects faster processing of information than does smiling. As with smiling, the first laughs occur in response to very active stimuli, such as the parent saying playfully, "I'm gonna get you!" and kissing the baby's tummy. As infants understand more about their world, they laugh at events with subtler elements of surprise, such as a silent game of peekaboo (Sroufe & Wunsch, 1972).

Around the middle of the first year, infants smile and laugh more when interacting with familiar people, a preference that strengthens the parent–child bond. Like adults, 10- to 12-month-olds have several smiles, which vary with context. They show a broad, "cheek-raised" smile in response to a parent's greeting; a reserved, muted smile to a friendly stranger; and a "mouth-open" smile during stimulating play (Bolzani et al., 2002; Dickson, Fogel, & Messinger, 1998).

■ **Anger and Sadness.** Newborn babies respond with generalized distress to a variety of unpleasant experiences, including hunger, painful medical procedures, changes in body temperature, and too much or too little stimulation. From 4 to 6 months into the second year, angry expressions increase in frequency and intensity. Older infants react with anger in a wider range of situations—when an object is taken away, their arms are restrained, the caregiver leaves for a brief time, or they are put down for a nap (Camras et al., 1992; Stenberg & Campos, 1990; Sullivan & Lewis, 2003).

Why do angry reactions increase with age? Cognitive and motor development are involved. As infants become capable of intentional behavior (see Chapter 5), they want to control their own actions (Alessandri, Sullivan, & Lewis, 1990). Older infants are also better at identifying who caused them pain or removed a toy. The rise in anger is also adaptive. New motor capacities enable an angry infant to defend herself or overcome an obstacle (Izard & Ackerman, 2000). Finally, anger motivates caregivers to relieve the infant's distress and, in the case of separation, may discourage them from leaving again soon.

Although expressions of sadness also occur in response to pain, removal of an object, and brief separations, they are less frequent than anger (Alessandri, Sullivan, & Lewis, 1990; Izard, Hembree, & Huebner, 1987). But when caregiver–infant communication is seriously disrupted, infant sadness is common—a condition that impairs all aspects of development (see the Lifespan Vista box on the following page).

■ **Fear.** Like anger, fear rises during the second half of the first year. Older infants often hesitate before playing with a new toy, and newly crawling infants soon show fear of heights (see Chapter 4). But the most frequent expression of fear is to unfamiliar adults, a response called **stranger anxiety**. Many infants and toddlers are quite wary of strangers, although the reaction does not always occur. It depends on several factors: the infant's temperament (some babies are generally more fearful), past experiences with strangers, and the current situation (Thompson & Limber, 1991). When an unfamiliar adult picks up the infant in a new setting, stranger anxiety is likely. But if the adult sits still while the baby moves around and a parent is nearby, infants often show positive and curious behavior (Horner, 1980). The stranger's style of interaction—expressing warmth, holding out an attractive toy, playing a familiar game, and approaching slowly rather than abruptly—reduces the baby's fear.

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The rise in fear after 6 months of age restrains infants' compelling drive to set out on their own. But this 1-year-old will be able to venture off confidently, as long as her mother remains near as a secure base to which she can return should she become too frightened.

A Lifespan Vista

Parental Depression and Children's Development

Approximately 8 to 10 percent of women experience chronic depression—mild to severe feelings of sadness and withdrawal that continue for months or years. Often the beginnings of this emotional state cannot be pinpointed; it simply becomes part of the person's daily life. In other instances, depression emerges or strengthens after childbirth but fails to subside as the new mother adjusts to hormonal changes in her body and gains confidence in caring for her baby. Julia experienced this type—called *postpartum depression*.

Although less recognized and studied, about 4 percent of fathers also report depression after the birth of a child (Deater-Deckard et al., 1998). Either maternal or paternal depression can interfere with effective parenting and seriously impair children's development. Although genetic makeup increases the risk of depressive illness, social and cultural factors are also involved.

Maternal Depression. During Julia's pregnancy, her husband, Kyle, showed so little interest in the baby that Julia worried that having a child might be a mistake. Then, shortly after Lucy was born, Julia's mood plunged. She became anxious and weepy, overwhelmed by Lucy's needs, and angry that she no longer had control over her own schedule. When Julia approached Kyle about her own fatigue and his unwillingness to help with the baby, he snapped that she overreacted to every move he made. Julia's childless friends stopped by just once to see Lucy but did not call again.

Julia's depressed mood quickly affected her baby. In the weeks after birth, infants of depressed mothers sleep poorly, are less attentive to their surroundings, and have elevated levels of the stress hormone cortisol (Field, 1998). The more extreme the depression and the greater the number of stressors in a mother's life (such as marital discord, little or no social support, and poverty), the more the parent-child relationship suffers (Simpson et al., 2003). Julia, for example, rarely smiled at, comforted, or talked to Lucy, who responded to her mother's

sad, vacant gaze by turning away, crying, and often looking sad or angry herself (Herrera, Reissland, & Shepherd, 2004; Stanley, Murray, & Stein, 2004). Each time this happened, Julia felt guilty and inadequate, and her depression deepened. By age 6 months, Lucy showed mental and emotional symptoms common in babies of depressed mothers—delays in development, an irritable mood, and attachment difficulties (Martins & Gaffan, 2000).

When maternal depression persists, the parent-child relationship worsens. Depressed mothers view their infants more negatively than do independent observers (Hart, Field, & Roitfarb, 1999). And they use inconsistent discipline—sometimes lax, at other times too forceful. As we will see in later chapters, children who experience these maladaptive parenting practices often have serious adjustment problems. Some withdraw into a depressive mood themselves; others become impulsive and aggressive (Hay et al., 2003).

Paternal Depression. In a study of a large representative sample of British parents and babies, researchers assessed depressive symptoms in both mothers and fathers shortly after birth and again the following year. Then they tracked the development of their children into the preschool years. Like findings on children of depressed mothers, paternal depression was strongly associated with children's behavior problems—especially overactivity, defiance, and aggression in boys—even after many other factors, including family SES and maternal depression, had been controlled (Ramchandani et al., 2005).

Although little is known about the precise effects of paternal depression on parenting, well-adjusted fathers are more positive, attentive, and involved with their babies. At older ages, paternal depression is linked to frequent father-child conflict (Kane & Garber, 2004). Over time, children subjected to parental negativity develop a pessimistic world view—one in which they lack self-confidence and perceive their parents and other people as threatening. Children who constantly feel in danger are likely to become overly aroused in stressful situa-

tions, easily losing control in the face of cognitive and social challenges (Cummings & Davies, 1994). Although children of depressed mothers or fathers may inherit a tendency toward emotional and behavior problems, quality of parenting is a major factor in their adjustment.

Interventions. Early treatment of parental depression is vital to prevent the disorder from interfering with the parent-child relationship. Julia's doctor referred her to a counselor, who helped Julia and Kyle with their marital problems and encouraged them to interact more sensitively with Lucy. Therapy that teaches depressed mothers to engage in emotionally positive, responsive caregiving reduces young children's attachment and developmental problems (Van Doesum, Hosman, & Riksen-Walraven, 2005). At times, antidepressant medication is prescribed. In most cases of postpartum depression, mothers bounce back after short-term treatment (Steinberg & Bellavance, 1999). When a depressed parent does not respond easily to treatment, a warm relationship with the other parent or another caregiver can safeguard children's development (Mezulis, Hyde, & Clark, 2004).

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This depressed mother appears overwhelmed and unresponsive to her infant. If her disengagement continues, the baby is likely to become negative and irritable, and eventually to withdraw. Over time, this disruption in the parent-child relationship leads to serious emotional and behavior problems.

Infant-rearing practices can modify stranger anxiety, as cross-cultural research reveals. Among the Efe hunters and gatherers of Congo, West Africa, where the maternal death rate is high, infant survival is safeguarded by a collective caregiving system in which, starting at birth, Efe babies are passed from one adult to another. Consequently, Efe infants show little stranger anxiety (Tronick, Morelli, & Ivey, 1992). In contrast, in Israeli kibbutzim (cooperative agricultural settlements), living in an isolated community vulnerable to terrorist attacks has led to widespread wariness of strangers. By the end of the first year, when infants look to others for cues about how to respond emotionally, kibbutz babies display greater stranger anxiety than their city-reared counterparts (Saarni, Mumme, & Campos, 1998).

The rise in fear after 6 months keeps newly mobile babies' enthusiasm for exploration in check. Once wariness develops, babies use the familiar caregiver as a **secure base**, or point from which to explore, venturing into the environment and then returning for emotional support. As part of this adaptive system, encounters with strangers lead to two conflicting tendencies: approach (indicated by interest and friendliness) and avoidance (indicated by fear). The infant's behavior is a balance between the two.

Eventually, as cognitive development permits toddlers to discriminate more effectively between threatening and non-threatening people and situations, stranger anxiety and other fears of the first two years decline. Fear also wanes as toddlers acquire more strategies for coping with it, as you will see when we discuss emotional self-regulation.

Understanding and Responding to the Emotions of Others

Infants' emotional expressions are closely tied to their ability to interpret the emotional cues of others. We have seen that within the first few months, babies match the feeling tone of the caregiver in face-to-face communication. Early on, infants detect others' emotions through a fairly automatic process of *emotional contagion*, just as we tend to feel happy or sad when we sense these emotions in others. Around 4 months, infants become sensitive to the structure and timing of face-to-face interactions. When they gaze, smile, or vocalize, they now expect their social partner to respond in kind (Rochat, Striano, & Blatt, 2002). Within these exchanges, babies become increasingly aware of the range of emotional expressions (Montague & Walker-Andrews, 2001).

Around 5 months, infants perceive facial expressions as organized patterns and can match the emotion in a voice with the appropriate face of a speaking person (see Chapter 4). Responding to emotional expressions as organized wholes indicates that these signals have become meaningful to babies. As skill at grasping others' intentions and establishing joint attention improves, infants realize that an emotional expression not only has meaning but is also a meaningful reaction to a specific object or event (Moses et al., 2001; Tomasello, 1999a).

Once these understandings are in place, infants engage in **social referencing**, in which they actively seek emotional information from a trusted person in an uncertain situation. Many studies show that the caregiver's emotional expression (happy, angry, or fearful) influences whether a 1-year-old will be wary of strangers, play with an unfamiliar toy, or cross the deep side of the visual cliff (Repacholi, 1998; Stenberg, 2003; Striano & Rochat, 2000).

Mothers and fathers serve as equally effective sources of emotional information. In both parents' absence, babies turn to other familiar caregivers (Camras & Sachs, 1991; Hirshberg & Svejda, 1990). The adult's voice, either alone or combined with a facial expression, is more effective than a facial expression alone in guiding the baby's behavior (Vaish & Striano, 2004). By relying on the adult's voice, the baby need not turn toward the adult but can focus on evaluating the novel event. The voice also offers both emotional and verbal information.

Parents can capitalize on social referencing to teach their youngster how to react to many everyday events. And social referencing lets toddlers compare their own assessments of events with those of others. Around the middle of the second year, they appreciate that others' emotional reactions may differ from their own. In one study, an adult showed 14- and 18-month-olds broccoli and crackers and acted delighted with one food but disgusted with other. When asked to share the food, 18-month-olds gave the adult whichever food she appeared to like, regardless of their own preferences (Repacholi & Gopnik, 1997).

In sum, social referencing helps young children move beyond simply reacting to others' emotional messages. They use those signals to guide their own actions and to find out about others' internal states and preferences.

Emergence of Self-Conscious Emotions

Besides basic emotions, humans are capable of a second, higher-order set of feelings, including guilt, shame, embarrassment, envy, and pride. These are called **self-conscious emotions** because each involves injury to or enhancement of our sense of self. We feel guilt when we have harmed someone and want to correct the wrongdoing. When we are ashamed or embarrassed, our negative feelings about our behavior make us want to retreat so others will no longer notice our failings. In contrast, pride reflects delight in the self's achievements, and we are inclined to tell others what we have accomplished (Saarni, Mumme, & Campos, 1998).

Self-conscious emotions appear in the second half of the second year, as 18- to 24-month-olds become firmly aware of the self as a separate, unique individual. Toddlers show shame and embarrassment by lowering their eyes, hanging their heads, and hiding their faces with their hands. They show guiltlike reactions, too: One 22-month-old returned a toy she had grabbed, then patted her upset playmate. Pride also emerges around this time, and envy by age 3 (Barrett, 1998; Garner, 2003; Lewis et al., 1989).

Besides self-awareness, self-conscious emotions require an additional ingredient: adult instruction in *when* to feel proud,



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Self-conscious emotions appear at the end of the second year. This Guatemalan 2-year-old undoubtedly feels a sense of pride as she helps care for her elderly grandmother—an activity highly valued in her culture.

ashamed, or guilty. Parents begin this tutoring early when they say, “Look how far you can throw that ball!” or “You should feel ashamed for grabbing that toy!”

Self-conscious emotions play important roles in children’s achievement-related and moral behaviors. The situations in which adults encourage these feelings vary from culture to culture. In most of the United States, children are taught to feel pride about personal achievement—throwing a ball the farthest, winning a game, and (later on) getting good grades. But in collectivist cultures, such as China and Japan, calling attention to purely personal success evokes embarrassment and self-effacement. And violating cultural standards by failing to show concern for others—a parent, a teacher, or an employer—sparks intense shame (Akimoto & Sanbonmatsu, 1999; Lewis, 1992).

Beginnings of Emotional Self-Regulation

Besides expressing a wider range of emotions, infants and toddlers begin to manage their emotional experiences. **Emotional self-regulation** refers to the strategies we use to adjust our emotional state to a comfortable level of intensity so we can accomplish our goals (Eisenberg et al., 1995; Eisenberg & Spinrad, 2004). When you remind yourself that an anxiety-provoking event will be over soon, suppress your anger at a friend’s behavior, or decide not to see a scary horror film, you are engaging in emotional self-regulation.

Emotional self-regulation requires voluntary, effortful management of emotions. This capacity for *effortful control* improves gradually, as a result of development of the cerebral

cortex and the assistance of caregivers, who help children manage intense emotion and teach them strategies for doing so (Eisenberg & Morris, 2002; Fox & Calkins, 2003). Individual differences in control of emotion are evident in infancy and, by early childhood, play such a vital role in children’s adjustment that—as we will see later—effortful control is regarded as a major dimension of temperament. A good start in regulating emotion during the first two years contributes greatly to autonomy and mastery of cognitive and social skills (Crockenberg & Leerkes, 2000).

In the early months of life, infants have only a limited capacity to regulate their emotional states. Although they can turn away from unpleasant stimulation and can mouth and suck when their feelings get too intense, they are easily overwhelmed. They depend on the soothing interventions of caregivers—lifting the distressed baby to the shoulder, rocking, and talking softly.

Rapid development of the frontal lobes of the cerebral cortex increases the baby’s tolerance for stimulation. Between 2 and 4 months, caregivers build on this capacity by initiating face-to-face play and attention to objects. In these interactions, parents arouse pleasure in the baby while adjusting the pace of their behavior so the infant does not become overwhelmed and distressed. As a result, the baby’s tolerance for stimulation increases (Kopp & Neufeld, 2003). By 4 months, the ability to shift attention helps infants control emotion. Babies who more readily turn away from unpleasant events are less prone to distress (Axia, Bonichini, & Benini, 1999). At the end of the first year, crawling and walking enable infants to regulate feelings by approaching or retreating from various situations.

Infants whose parents “read” and respond sympathetically to their emotional cues tend to be less fussy, more easily soothed, and more interested in exploration. In contrast, parents who wait to intervene until the infant has become extremely agitated reinforce the baby’s rapid rise to intense distress. When caregivers do not regulate stressful experiences for babies, brain structures that buffer stress may fail to develop properly, resulting in an anxious, reactive child with a reduced capacity for regulating emotion (Crockenberg & Leerkes, 2000; Nelson & Bosquet, 2000).

Caregivers also provide lessons in socially approved ways of expressing feelings. From the first few months, parents encourage infants to suppress negative emotion by imitating their expressions of interest, happiness, and surprise more often than their expressions of anger and sadness. Infant boys get more of this training than girls, in part because boys have a harder time regulating negative emotion (Malatesta et al., 1986; Weinberg et al., 1999). As a result, the well-known sex difference—females as emotionally expressive and males as emotionally controlled—is promoted at a tender age. Collectivist cultures place particular emphasis on socially appropriate emotional behavior. Compared with North Americans, Japanese and Chinese adults discourage the expression of strong emotion in babies (Fogel, 1993; Kuchner, 1989). By the end of the first year, Chinese and Japanese infants smile and cry less than American infants (Camras et al., 1998).

Toward the end of the second year, a vocabulary for talking about feelings—“happy,” “surprised,” “scary,” “yucky,” and “mad”—develops rapidly (Bretherton et al., 1986). Although 2-year-olds can redirect their attention for short periods when they are distressed, they are better able to do so in the presence of a supportive adult (Grolnick, Bridges, & Connell, 1996). And once they can describe their internal states, they can guide caregivers to help them. For example, while listening to a story about monsters, Grace whimpered, “Mommy, scary.” Monica put the book down and gave Grace a comforting hug.

Ask Yourself

Review

Why do many infants show stranger anxiety in the second half of the first year? What factors can increase or decrease wariness of strangers?

Apply

At age 14 months, Reggie built a block tower and gleefully knocked it down. But at age 2, he called to his mother and pointed proudly at his tall block tower. What explains this change in Reggie’s emotional behavior?

Connect

Why do children of depressed mothers have difficulty regulating emotion (see page 000)? What implications do their weak self-regulatory skills have for their response to cognitive and social challenges?

Reflect

Describe several recent events in your own life that required you to manage negative emotion. How did you react in each case? How might your early experiences, gender, and cultural background have influenced your style of emotional self-regulation?

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Temperament and Development

From early infancy, Caitlin’s sociability was unmistakable. She smiled and laughed while interacting with adults and, in her second year, readily approached other children. Meanwhile, Monica marveled at Grace’s calm, relaxed disposition. At 19 months, she sat contented in a highchair through a two-hour family celebration at a restaurant. In contrast, Timmy was active and distractible. Vanessa found herself chasing him as he dropped one toy, moved on to the next, and climbed on chairs and tables.

When we describe one person as cheerful and “upbeat,” another as active and energetic, and still others as calm, cautious, or prone to angry outbursts, we are referring to **temperament**—early-appearing, stable individual differences in reactivity and self-regulation. *Reactivity* refers to quickness and intensity of emotional arousal, attention, and motor activ-

ity. *Self-regulation*, as we have seen, refers to strategies that modify that reactivity (Rothbart, 2004; Rothbart & Bates, 1998). The psychological traits that make up temperament are believed to form the cornerstone of the adult personality.

In 1956, Alexander Thomas and Stella Chess initiated the New York Longitudinal Study, a groundbreaking investigation of the development of temperament that followed 141 children from early infancy well into adulthood. Results showed that temperament can increase a child’s chances of experiencing psychological problems or, alternatively, protect a child from the negative effects of a highly stressful home life. At the same time, Thomas and Chess (1977) discovered that parenting practices can modify children’s temperaments considerably.

These findings stimulated a growing body of research on temperament, including its stability, biological roots, and interaction with child-rearing experiences. Let’s begin to explore these issues by looking at the structure, or makeup, of temperament and how it is measured.

The Structure of Temperament

Thomas and Chess’s nine dimensions, listed in Table 6.2 on the following page, served as the first influential model of temperament. When detailed descriptions of infants’ and children’s behavior obtained from parent interviews were rated on these dimensions, certain characteristics clustered together, yielding three types of children:

- The **easy child** (40 percent of the sample) quickly establishes regular routines in infancy, is generally cheerful, and adapts easily to new experiences.
- The **difficult child** (10 percent of the sample) is irregular in daily routines, is slow to accept new experiences, and tends to react negatively and intensely.
- The **slow-to-warm-up child** (15 percent of the sample) is inactive, shows mild, low-key reactions to environmental stimuli, is negative in mood, and adjusts slowly to new experiences.

Note that 35 percent of the children did not fit any of these categories. Instead, they showed unique blends of temperamental characteristics.

The “difficult” pattern has sparked the most interest because it places children at high risk for adjustment problems—both anxious withdrawal and aggressive behavior in early and middle childhood (Bates, Wachs, & Emde, 1994; Ramos et al., 2005; Thomas, Chess, & Birch, 1968). Compared with difficult children, slow-to-warm-up children present fewer problems in the early years. However, they tend to show excessive fearfulness and slow, constricted behavior in the late preschool and school years, when they are expected to respond actively and quickly in classrooms and peer groups (Chess & Thomas, 1984; Schmitz et al., 1999).

Table 6.2 also shows a second model of temperament, devised by Mary Rothbart, which combines overlapping dimensions of Thomas and Chess and other researchers. For

Table 6.2 Two Models of Temperament

| Thomas and Chess | | Rothbart | |
|--------------------------------|--|----------------------------|--|
| <i>Dimension</i> | <i>Description</i> | <i>Dimension</i> | <i>Description</i> |
| Activity level | Ratio of active periods to inactive ones | Reactivity | |
| Rhythmicity | Regularity of body functions, such as sleep, wakefulness, hunger, and excretion | Activity level | Level of gross motor activity |
| Distractibility | Degree to which stimulation from the environment alters behavior—for example, whether crying stops when a toy is offered | Attention span/persistence | Duration of orienting or interest |
| Approach/withdrawal | Response to a new object, food, or person | Fearful distress | Wariness and distress in response to intense or novel stimuli, including time to adjust to new situations |
| Adaptability | Ease with which child adapts to changes in the environment, such as sleeping or eating in a new place | Irritable distress | Extent of fussing, crying, and distress when desires are frustrated |
| Attention span and persistence | Amount of time devoted to an activity, such as watching a mobile or playing with a toy | Positive affect | Frequency of expression of happiness and pleasure |
| Intensity of reaction | Energy level of response, such as laughing, crying, talking, or gross motor activity | Self-regulation | |
| Threshold of responsiveness | Intensity of stimulation required to evoke a response | Effortful control | Capacity to voluntarily suppress a dominant, reactive response in order to plan and execute a more adaptive response |
| Quality of mood | Amount of friendly, joyful behavior as opposed to unpleasant, unfriendly behavior | | |

Sources: Left: Thomas & Chess, 1977; Right: Rothbart, Ahadi, & Evans, 2000; Rothbart & Mauro, 1990.

example, “distractibility” and “attention span and persistence” are considered opposite ends of the same dimension, labeled “attention span/persistence.” This model also includes a dimension not identified by Thomas and Chess, “irritable distress,” which distinguishes between reactivity triggered by frustration and reactivity due to fear. And it omits overly broad dimensions such as “rhythmicity,” “intensity of reaction,” and “threshold of responsiveness” (Rothbart, Ahadi, & Evans, 2000; Rothbart & Mauro, 1990). A child who is rhythmic in sleeping is not necessarily rhythmic in eating or bowel habits. And a child who smiles and laughs quickly and intensely is not necessarily quick and intense in fear, irritability, or motor activity.

According to Rothbart, individuals differ not just in their reactivity on each dimension, but also in the self-regulatory dimension of temperament, **effortful control**—the capacity to voluntarily suppress a dominant response in order to plan and execute a more adaptive response (Rothbart, 2003; Rothbart & Bates, 1998). Variations in effortful control are evident in how effectively a child can focus and shift attention, inhibit impulses, and manage negative emotion.

Measuring Temperament

Temperament is often assessed through interviews or questionnaires given to parents. Behavior ratings by pediatricians,

teachers, and others familiar with the child and laboratory observations by researchers have also been used. Parental reports are convenient and take advantage of parents’ depth of knowledge about the child (Gartstein & Rothbart, 2003). Although information from parents has been criticized as biased, parental reports are moderately related to researchers’ observations of children’s behavior (Mangelsdorf, Schoppe, & Buur, 2000). And parent perceptions are useful for understanding the way parents view and respond to their child.

Although observations by researchers in the home or laboratory avoid the subjectivity of parental reports, they can lead to other inaccuracies. In homes, observers find it hard to capture rare but important events, such as infants’ response to frustration. And in an unfamiliar lab, fearful children who calmly avoid certain experiences at home may become too upset to complete the session (Wachs & Bates, 2001). Still, researchers can better control children’s experiences in the lab. And they can conveniently combine observations of behavior with physiological measures to gain insight into the biological bases of temperament.

Most physiological research has focused on children who fall at opposite extremes of the positive-affect and fearful-distress dimensions of temperament (refer again to Table 6.2): **inhibited**, or **shy, children**, who react negatively to and withdraw from novel stimuli, and **uninhibited**, or **sociable, chil-**

dren, who display positive emotion to and approach novel stimuli. As the Biology and Environment box on the following page reveals, biologically based reactivity—evident in heart rate, hormone levels, and EEG brain waves—differentiates children with inhibited and uninhibited temperaments. Nevertheless, parenting practices are crucially important in whether an inhibited style is sustained over time.

Stability of Temperament

Many studies indicate that young children who score low or high on attention span, irritability, sociability, shyness, or effortful control tend to respond similarly when assessed again several months to a few years later and, occasionally, even into the adult years (Caspi et al., 2003; Kochanska & Knaack, 2003; Pedlow et al., 1993; Rothbart, Ahadi, & Evans, 2000; Ruff & Rothbart, 1996). However, the overall stability of temperament is low to moderate (Putnam, Samson, & Rothbart, 2000).

A major reason is that temperament itself develops with age. To illustrate, let's look at irritability and activity level. Recall from Chapter 3 that the early months are a period of fussing and crying for most babies. As infants can better regulate their attention and emotions, many who initially seemed irritable become calm and content. In the case of activity level, the meaning of the behavior changes. At first, an active, wriggling infant tends to be highly aroused and uncomfortable, whereas an inactive baby is often alert and attentive. As infants begin to move on their own, the reverse is so! An active crawler is usually alert and interested in exploration, whereas an inactive baby might be fearful and withdrawn.

These discrepancies help us understand why long-term predictions from early temperament are most accurately made after age 2, when styles of responding are better established (Caspi, 1998; Lemery et al., 1999). In line with this idea, between 2½ and 3, children perform more consistently across a wide range of tasks that require effortful control, such as waiting for a reward, lowering their voice to a whisper, and selectively attending to one stimulus while ignoring competing stimuli. Researchers believe that around this time, areas in frontal lobes involved in suppressing impulses develop rapidly (Gerardi-Caulton, 2000; Rothbart et al., 2003).

Furthermore, 2- and 3-year-olds with fearful or negative, irritable temperaments who experience patient, supportive parenting are better at managing their reactivity (Warren & Simmens, 2005). They are especially likely to decline in difficulty during the preschool years—findings demonstrating that child rearing plays an important role in modifying biologically based temperamental traits.

When we consider the evidence as a whole, the low to moderate stability of temperament makes sense. Many factors affect the extent to which a temperamental style persists, including development of the biological systems on which temperament is based, the child's capacity for effortful control, and rearing experiences. But children's temperaments rarely change from one extreme to another—that is, shy toddlers seldom become highly sociable, and irritable toddlers seldom

TEXT IS NOT FINAL

become easy-going. With these ideas in mind, let's turn to genetic and environmental contributions to temperament and personality.

Genetic Influences

The word *temperament* implies a genetic foundation for individual differences in personality. Research indicates that identical twins are more similar than fraternal twins across a wide range of temperamental and personality traits (Caspi, 1998; DiLalla, Kagan, & Reznick, 1994; Emde et al., 1992; Goldsmith et al., 1999; Saudino & Cherny, 2001). In Chapter 2, we noted that heritability estimates suggest a moderate role for heredity in temperament and personality: On average, half of individual differences have been attributed to differences in genetic makeup.

Consistent ethnic and sex differences in early temperament exist, again implying a role for heredity. Compared with North American Caucasian infants, Japanese and Chinese babies tend to be less active, irritable, and vocal, more easily soothed when upset, and better at quieting themselves (Kagan et al., 1994; Lewis, Ramsay, & Kawakami, 1993). Grace's capacity to remain contentedly seated in her highchair through a long family dinner certainly fits with this evidence. And Timmy's high rate of activity is consistent with sex differences (Garstein & Rothbart, 2003). From an early age, boys tend to be more active and daring and girls more anxious and timid—a difference reflected in boys' higher injury rates throughout childhood and adolescence.

Nevertheless, genetic influences vary with the temperamental trait and with the age of individuals studied. For example, heritability estimates are higher for expressions of negative emotion than for positive emotion. And the role of heredity is considerably less in infancy than in childhood and later years, when temperament becomes more stable (Wachs & Bates, 2001).

Environmental Influences

Environment also has a powerful influence on temperament. For example, persistent nutritional and emotional deprivation profoundly alters temperament, resulting in maladaptive emotional reactivity. Recall from Chapter 4 that even after dietary improvement, children exposed to severe, early malnutrition remain more distractible and fearful than their age-mates. And infants reared in deprived orphanages are easily overwhelmed by stressful events. Their poor regulation of emotion results in inattention and weak impulse control, including frequent expressions of anger (see pages 000 and 000).

Other research shows that heredity and environment often combine to influence temperament, since a child's approach to the world affects the experiences to which she is exposed. To see how this works, let's take a second look at ethnic and sex differences in temperament.

Japanese mothers usually say that babies come into the world as independent beings who must learn to rely on their

Biology and Environment

Development of Shyness and Sociability

Two 4-month-old babies, Larry and Mitch, visited the laboratory of Jerome Kagan, who observed their reactions to various unfamiliar experiences. When exposed to new sights and sounds, such as a moving mobile decorated with colorful toys, Larry tensed his muscles, moved his arms and legs with agitation, and began to cry. In contrast, Mitch remained relaxed and quiet, smiling and cooing.

As toddlers, Larry and Mitch returned to the laboratory, where they experienced procedures designed to induce uncertainty. Electrodes were placed on their bodies and blood pressure cuffs on their arms to measure heart rate; toy robots, animals, and puppets moved before their eyes; and unfamiliar people behaved in unexpected ways or wore novel costumes. While Larry whimpered and quickly withdrew, Mitch watched with interest, laughed, and approached the toys and strangers.

On a third visit, at age 4½, Larry barely talked or smiled during an interview with an unfamiliar adult. In contrast, Mitch asked questions and communicated his pleasure at each new activity. In a playroom with two unfamiliar peers, Larry pulled back and watched, while Mitch made friends quickly.

In longitudinal research on several hundred Caucasian children, Kagan (1998) found that about 20 percent of 4-month-old babies were, like Larry, easily upset by novelty; 40 percent, like Mitch, were comfortable, even delighted, with new experiences. About 20 to 30 percent of these groups retained their temperamental styles as they grew older (Kagan, 2003; Kagan & Saudino, 2001). But most children's dispositions became less extreme over time. Biological makeup and child-rearing experiences jointly influenced stability and change in temperament.

Physiological Correlates of Shyness and Sociability. Kagan believes that individual differences in arousal of the *amygdala*, an inner brain structure that controls avoidance reactions, contribute to these contrasting temperaments. In shy, inhibited

children, novel stimuli easily excite the amygdala and its connections to the cerebral cortex and the sympathetic nervous system, which prepares the body to act in the face of threat. In sociable, uninhibited children, the same level of stimulation evokes minimal neural excitation. While viewing photos of unfamiliar faces, adults who had been classified as inhibited in the second year of life showed greater fMRI activity in the amygdala than adults who had been uninhibited as toddlers (Schwartz et al., 2003). And the two emotional styles are distinguished by additional physiological responses that are known to be mediated by the amygdala:

- **Heart rate.** From the first few weeks of life, the heart rates of shy children are consistently higher than those of sociable youngsters, and they speed up further in response to unfamiliar events (Snidman et al., 1995).
- **Cortisol.** Saliva concentration of the stress hormone cortisol tends to be higher in shy than in sociable children (Gunnar & Nelson, 1994).
- **Pupil dilation, blood pressure, and skin surface temperature.** Compared with sociable children, shy children show greater pupil dilation, rise in blood pressure, and cooling of the fingertips when faced with novelty (Kagan et al., 1999).

Another physiological correlate of approach-withdrawal to people and objects is the pattern of brain waves in the frontal lobes of the cerebral cortex. Shy infants and preschoolers show greater EEG activity in the right frontal lobe, which is associated with negative emotional reactivity; sociable children show the opposite pattern (Calkins, Fox, & Marshall, 1996). Neural activity in the amygdala is transmitted to the frontal lobes, probably contributing to these differences. Inhibited children also show greater generalized activation of the cerebral cortex, an indicator of high emotional arousal and monitoring of new situations for potential threats (Henderson et al., 2004).

Child-Rearing Practices. According to Kagan (1998), extremely shy or sociable

children inherit a physiology that biases them toward a particular temperamental style. Yet heritability research indicates that genes contribute only modestly to shyness and sociability. Experience, too, has a powerful impact.

Child-rearing practices affect the chances that an emotionally reactive baby will become a fearful child. Warm, supportive parenting reduces shy infants' and preschoolers' intense physiological reaction to novelty, whereas cold, intrusive parenting heightens anxiety (Rubin, Burgess, & Hastings, 2002). And if parents protect infants who dislike novelty from minor stresses, they make it harder for the child to overcome an urge to retreat. Parents who make appropriate demands for their baby to approach new experiences help the child overcome fear (Rubin et al., 1997).

When inhibition persists, it leads to excessive cautiousness, low self-esteem, and loneliness. In adolescence, persistent shyness increases the risk of severe anxiety, especially social phobia—intense fear of being humiliated in social situations (Prior et al., 2000). For inhibited children to acquire effective social skills, parenting must be tailored to their temperaments—a theme we will encounter again in this and later chapters.



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A strong physiological response to uncertain situations prompts this child to cling to her father. With patient but insistent encouragement, he can modify her reactivity and help her overcome her urge to retreat from unfamiliar events.

mothers through close physical contact. North American mothers typically believe just the opposite—that they must wean babies away from dependence toward autonomy (Kojima, 1986). Consistent with these beliefs, Asian mothers interact gently and soothingly, relying heavily on gestures and (as we saw earlier) discouraging strong emotion in their babies, whereas Caucasian mothers use a more active, stimulating, verbal approach (Rothbaum et al., 2000a). These differences enhance early ethnic differences in temperament.

A similar process seems to contribute to sex differences in temperament. Within 24 hours after birth (before they have had much experience with the baby), parents perceive boys and girls differently. They rate sons as larger, better coordinated, more alert, and stronger, daughters as softer, weaker, and more delicate and awkward (Stern & Karraker, 1989; Vogel et al., 1991). These gender-stereotyped beliefs influence parents' treatment of infants and toddlers. Parents more often encourage their young sons to be physically active and their daughters to seek help and physical closeness (Ruble & Martin, 1998).

In families with several children, an additional influence on temperament is at work. Listen to the comments parents make, and you will see that they often look for personality differences in their children: “She’s a lot more active,” “He’s more sociable,” “She’s far more persistent.” As a result, parents often regard siblings as more distinct than other observers do. In a large study of 1- to 3-year-old twin pairs, parents rated identical twins as resembling each other less in temperament than researchers’ ratings indicated. And whereas researchers rated fraternal twins as moderately similar, parents viewed them as somewhat opposite in temperamental style (see Figure 6.1) (Saudino, 2003).

Parents’ tendency to emphasize each child’s unique qualities affects their child-rearing practices. In an investigation of identical-twin toddlers, mothers treated each twin differently. The twin who received more warmth and less harshness was more positive in mood and social behavior (Deater-Deckard et al., 2001). Each child, in turn, evokes responses from caregivers that are consistent with parental beliefs and the child’s developing temperament.

Besides different experiences within the family, siblings have distinct experiences with teachers, peers, and others in their community that affect development. And in middle childhood and adolescence, they often seek ways to differ from one another. In adulthood, both identical and fraternal twins tend to become increasingly dissimilar (Loehlin & Martin, 2001; McCartney, Harris, & Bernieri, 1990). The less contact twins have with each other, the stronger this effect. In sum, temperament and personality can be understood only in terms of complex interdependencies between genetic and environmental factors.

Temperament and Child Rearing: The Goodness-of-Fit Model

As we have seen, the temperaments of many children change with age. This suggests that if a child’s disposition interferes

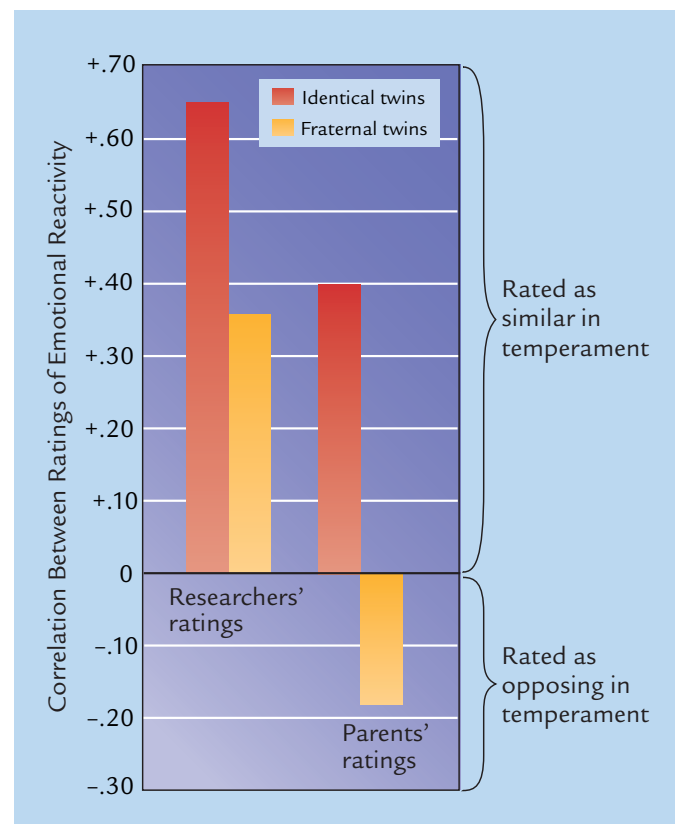


FIGURE 6.1 Temperament correlations for identical and fraternal twin pairs, as rated by researchers and parents. Parents rated 1- to 3-year-old identical twins as resembling each other less in temperament than did researchers. And whereas researchers rated fraternal twins as moderately similar, parents rated them as somewhat opposing in temperament. The correlations depicted here are for emotional reactivity. Activity level, shyness, and attention span/persistence yielded a similar pattern of findings. (Adapted from Saudino, 2003.)

with learning or getting along with others, adults can counteract the child’s maladaptive behavior.

Thomas and Chess (1977) proposed a **goodness-of-fit model** to describe how temperament and environment can together produce favorable outcomes. Goodness of fit involves creating child-rearing environments that recognize each child’s temperament while encouraging more adaptive functioning.

Difficult children (who withdraw from new experiences and react negatively and intensely) frequently experience parenting that fits poorly with their dispositions, putting them at high risk for later adjustment problems. By the second year, parents of difficult children often resort to angry, punitive discipline, which undermines the development of effortful control. As the child reacts with defiance and disobedience, parents become increasingly stressed (Coplan, Bowker, & Cooper, 2002). As a result, they continue their coercive tactics and also discipline inconsistently, at times rewarding the child’s non-compliance by giving in to it (Calkins, 2002). These practices maintain and even increase the child’s irritable, conflict-ridden style. In contrast, as we have seen, when parents are positive



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“Goodness of fit” describes the interaction between a child’s biologically based temperament and the child-rearing environment. This mother’s calm, soothing response to her baby’s fussiness will help the child regulate intense emotional reactions and develop more adaptive responses to frustration.

and sensitive, which helps infants and toddlers regulate emotion, difficultness declines.

Effective parenting, however, depends on life conditions. In a comparison of Russian and U.S. babies, Russian infants were more emotionally negative, fearful, and upset when frustrated (Garstein, Slobodskaya, & Kinsht, 2003). Faced with a depressed national economy, which resulted in financial worries and longer work hours, Russian parents may have lacked time and energy for the patient parenting that protects against difficultness.

Cultural values also affect the fit between parenting and child temperament, as research in China illustrates. In the past, collectivist values, which discourage self-assertion, led Chinese adults to evaluate shy children positively, and several studies showed that Chinese children of a decade or two ago appeared well-adjusted, academically and socially (Chen, Rubin, & Li, 1995; Chen et al., 1998).

But rapid expansion of a competitive economy in China, which requires assertiveness and sociability for success, may be responsible for a recent reversal in Chinese parents’ and teacher’s attitudes toward childhood shyness (Xu & Peng, 2001; Yu, 2002). Among Shanghai fourth graders, the association

between shyness and adjustment also changed over time. Whereas shyness was positively correlated with teacher-rated competence, peer acceptance, leadership, and academic achievement in 1990, these relationships weakened in 1998 and reversed in 2002, at which time they mirrored findings of Western research (see Figure 6.2) (Chen et al., 2005). Cultural context makes a difference in whether shy children receive support or disapproval and whether they adjust well or poorly.

An effective match between rearing conditions and child temperament is best accomplished early, before unfavorable temperament–environment relationships produce maladjustment. Both difficult and shy children benefit from warm, accepting parenting that makes firm but reasonable demands for mastering new experiences. With reserved, inactive toddlers, highly stimulating parental behavior—encouraging, questioning, and pointing out objects—fosters exploration. Yet for highly active babies, these same parental behaviors are too directive, dampening their play and curiosity (Gandour, 1989; Miceli et al., 1998).

The goodness-of-fit model reminds us that infants have unique dispositions that adults must accept. Parents can neither take full credit for their children’s virtues nor be blamed for all their faults. But parents can transform an environment that exaggerates a child’s problems into one that builds on the child’s strengths. As we will see, goodness of fit is also at the heart of infant–caregiver attachment. This first intimate relationship grows out of interaction between parent and baby, to which the emotional styles of both partners contribute.

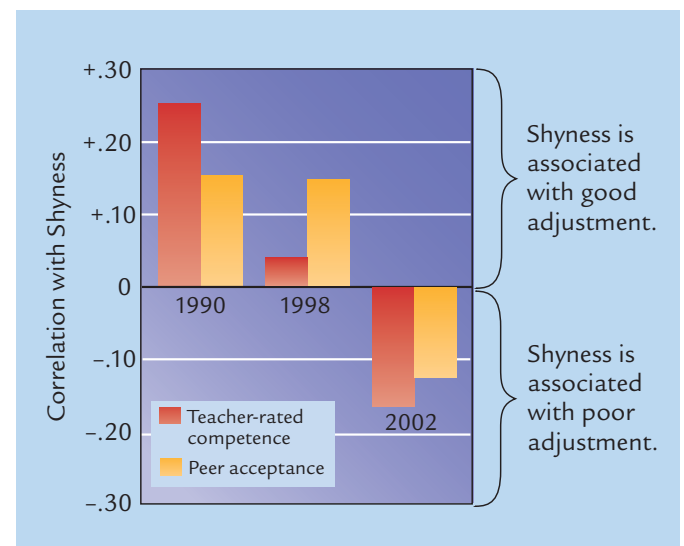


FIGURE 6.2 Changes over time in correlations between shyness and adjustment among Chinese fourth graders. In 1990, shy Chinese children appeared well-adjusted. But as China’s market economy expanded and valuing of self-assertion and sociability increased, the direction of the correlations shifted. In 2002, shyness was negatively associated with adjustment. These findings are for teacher-rated competence and peer acceptance. Those for leadership (holding offices in student organizations) and academic achievement changed similarly. (Adapted from Chen et al., 2005.)

Ask Yourself

Review

How do genetic and environmental factors work together to influence temperament? Cite several examples from research.

Apply

At 18 months, highly active Jake climbed out of his highchair and had a tantrum when his father insisted that he sit at the table until the meal was finished. Using the concept of goodness of fit, suggest another way of handling Jake.

Connect

Do findings on ethnic and sex differences in temperament illustrate genetic–environmental correlation, discussed on page 00 in Chapter 2? Explain.

Reflect

How would you describe your temperament as a young child? Do you think your temperament has remained stable, or has it changed? What factors might be involved?

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Development of Attachment

Attachment is the strong affectionate tie we have with special people in our lives that leads us to feel pleasure when we interact with them and to be comforted by their nearness in times of stress. By the second half of the first year, infants have become attached to familiar people who have responded to their needs, and they single out their parents for special attention. When the mother enters the room, the baby breaks into a broad, friendly smile. When she picks him up, he pats her face, explores her hair, and snuggles against her. When he feels anxious or afraid, he crawls into her lap and clings closely.

Freud first suggested that the infant's emotional tie to the mother is the foundation for all later relationships. Contemporary research indicates that—although the quality of the infant–parent bond is vitally important—later development is influenced not just by early attachment experiences, but also by the continuing quality of the parent–child relationship.

Attachment has also been the subject of intense theoretical debate. Turn back to the description of Erikson's theory at the beginning of this chapter and notice how the *psychoanalytic perspective* regards feeding as the primary context in which caregivers and babies build this emotional bond. *Behaviorism*, too, emphasizes the importance of feeding, but for different reasons. According to a well-known behaviorist account, as the mother satisfies the baby's hunger, infants learn to prefer her soft caresses, warm smiles, and tender words of comfort because these events have been paired with tension relief.

Although feeding is an important context for building a close relationship, attachment does not depend on hunger sat-

isfaction. In the 1950s, a famous experiment showed that rhesus monkeys reared with terrycloth and wire-mesh “surrogate mothers” clung to the soft terrycloth substitute, even though the wire-mesh “mother” held the bottle and infants had to climb on it to be fed (Harlow & Zimmerman, 1959). Similarly, human infants become attached to family members who seldom feed them, including fathers, siblings, and grandparents. And toddlers in Western cultures who sleep alone and experience frequent daytime separations from their parents sometimes develop strong emotional ties to cuddly objects, such as blankets and teddy bears, that have never played a role in infant feeding!

Ethological Theory of Attachment

Today, **ethological theory of attachment**, which recognizes the infant's emotional tie to the caregiver as an evolved response that promotes survival, is the most widely accepted view. John Bowlby (1969), who first applied this idea to the infant–caregiver bond, was inspired by Konrad Lorenz's studies of imprinting in baby geese (see Chapter 1). Bowlby believed that the human infant, like the young of other animal species, is endowed with a set of built-in behaviors that help keep the parent nearby to protect the infant from danger and to provide

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Baby monkeys reared with “surrogate mothers” from birth preferred to cling to a soft terrycloth “mother” instead of a wire-mesh “mother” that held a bottle. These findings reveal that attachment—the emotional bond between baby and caregiver—is not simply based on hunger satisfaction, as earlier theorists had assumed.

support for exploring and mastering the environment (Waters & Cummings, 2000). Contact with the parent also ensures that the baby will be fed, but Bowlby pointed out that feeding is not the basis for attachment. Rather, the attachment bond can best be understood in an evolutionary context in which survival of the species—through ensuring both safety and competence—is of utmost importance.

According to Bowlby, the infant's relationship with the parent begins as a set of innate signals that call the adult to the baby's side. Over time, a true affectionate bond develops, supported by new cognitive and emotional capacities as well as by a history of warm, sensitive care. Attachment develops in four phases:

1. *Preattachment phase* (birth to 6 weeks). Built-in signals—grasping, smiling, crying, and gazing into the adult's eyes—help bring newborn babies into close contact with other humans, who comfort them. Although babies of this age recognize their own mother's smell and voice (see Chapter 3), they are not yet attached to her, since they do not mind being left with an unfamiliar adult.
2. *"Attachment-in-the-making" phase* (6 weeks to 6–8 months). During this phase, infants respond differently to a familiar caregiver than to a stranger. For example, at 4 months, Timmy smiled, laughed, and babbled more freely when interacting with his mother and quieted more quickly when she picked him up. As infants learn that their own actions affect the behavior of those around them, they begin to develop a *sense of trust*—the expectation that the caregiver will respond when signaled—but they still do not protest when separated from her.
3. *"Clear-cut" attachment phase* (6–8 months to 18 months–2 years). Now attachment to the familiar caregiver is evident. Babies display **separation anxiety**, becoming upset when the adult whom they have come to rely on leaves. Separation anxiety does not always occur; like stranger anxiety (see page 000), it depends on infant temperament and the current situation. But in many cultures, separation anxiety increases between 6 and 15 months. Besides protesting the parent's departure, older infants and toddlers try hard to maintain her presence. They approach, follow, and climb on her in preference to others. And they use the familiar caregiver as a *secure base* from which to explore.
4. *Formation of a reciprocal relationship* (18 months–2 years and on). By the end of the second year, rapid growth in representation and language permits toddlers to understand some of the factors that influence the parent's coming and going and to predict her return. As a result, separation protest declines. Now children start to negotiate with the caregiver, using requests and persuasion to alter her goals. For example, at age 2, Caitlin asked Carolyn and David to read a story before leaving her with a baby-sitter. The extra time with her parents, along with a better understanding of where they were going ("to have

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Separation anxiety increases between 6 and 15 months, when clear-cut infant-caregiver attachment develops. But the occurrence of separation anxiety depends on infant temperament, context, and adult behavior. Here, the child's distress at his mother's departure will probably be short-lived because his caregiver is supportive and sensitive.

dinner with Uncle Sean") and when they would be back ("right after you go to sleep"), helped Caitlin withstand her parents' absence.

According to Bowlby (1980), out of their experiences during these four phases, children construct an enduring affectionate tie to the caregiver that they can use as a secure base in the parents' absence. This image serves as an **internal working model**, or set of expectations about the availability of attachment figures and their likelihood of providing support during times of stress. The internal working model becomes a vital part of personality, serving as a guide for all future close relationships (Bretherton & Munholland, 1999). Children continually revise and expand the internal working model as their cognitive, emotional, and social capacities increase; as they interact with parents; and as they form other close bonds with adults, siblings, and friends.

Measuring the Security of Attachment

Although virtually all family-reared babies become attached to a familiar caregiver by the second year, the quality of this relationship varies. Some children appear secure—certain that the caregiver will provide affection and support. Others seem anxious and uncertain.

A widely used laboratory procedure for assessing the quality of attachment between 1 and 2 years of age is the **Strange Situation**, which takes the baby through eight short episodes in which brief separations from and reunions with the parent occur (see Table 6.3 on the following page). In designing it,

Mary Ainsworth and her colleagues reasoned that securely attached infants and toddlers should use the parent as a secure base from which to explore an unfamiliar playroom, and that, when the parent leaves, an unfamiliar adult should be less comforting than the parent.

Observing infants' responses to these episodes, researchers have identified a secure attachment pattern and three patterns of insecurity; a few babies cannot be classified (Ainsworth et al., 1978; Barnett & Vondra, 1999; Main & Solomon, 1990). From the description at the beginning of this chapter, which pattern do you think Grace displayed after adjusting to her adoptive family?

✔ **Secure attachment.** These infants use the parent as a secure base. When separated, they may or may not cry, but if they do, it is because the parent is absent and they prefer her to the stranger. When the parent returns, they actively seek contact, and their crying is reduced immediately. About 65 percent of North American infants show this pattern.

✔ **Avoidant attachment.** These infants seem unresponsive to the parent when she is present. When she leaves, they usually are not distressed, and they react to the stranger in much the same way as to the parent. During reunion, they avoid or are slow to greet the parent, and when picked up, they often fail to cling. About 20 percent of North American infants show this pattern.

✔ **Resistant attachment.** Before separation, these infants seek closeness to the parent and often fail to explore. When she leaves, they are usually distressed, and on her return they display angry, resistive behavior, sometimes hitting and pushing. Many continue to cry after being picked up and cannot be comforted easily. About 10 to 15 percent of North American infants show this pattern.

✔ **Disorganized/disoriented attachment.** This pattern reflects the greatest insecurity. At reunion, these infants show confused, contradictory behaviors. They might look away while being held by the parent or approach her with flat, depressed emotion. Most communicate their emotion with a dazed facial expression. A few cry out after having calmed down or display odd, frozen postures. About 5 to 10 percent of North American infants show this pattern.

An alternative method, the **Attachment Q-Sort**, suitable for children between 1 and 4 years, depends on home observation (Waters et al., 1995). Either the parent or a highly trained observer sorts 90 behaviors ("Child greets mother with a big smile when she enters the room," "If mother moves very far, child follows along") into categories ranging from highly descriptive to not at all descriptive of the child. Then a score, ranging from high to low in security, is computed.

The Q-Sort is time-consuming, requiring a nonparent observer to spend several hours observing the child before sorting. And it does not indicate patterns of insecurity. But it may better reflect the parent–infant relationship in everyday life. Expert observers' Q-Sorts correspond well with babies' secure-base behavior in the Strange Situation. Parents' Q-Sorts, however, show little relationship with the Strange Situation (van IJzendoorn et al., 2004). Parents of insecure children, especially, may have difficulty accurately reporting their child's attachment behaviors.

Stability of Attachment

Research on the stability of attachment patterns between 1 and 2 years of age yields a wide range of findings (Thompson, 1998, 2000). A close look at which babies stay the same and which ones change yields a more consistent picture. Quality of attachment is usually secure and stable for middle-SES babies

Table 6.3 Episodes in the Strange Situation

| Episode | Events | Attachment Behavior Observed |
|---------|---|-----------------------------------|
| 1 | Researcher introduces parent and baby to playroom and then leaves. | |
| 2 | Parent is seated while baby plays with toys. | Parent as a secure base |
| 3 | Stranger enters, is seated, and talks to parent. | Reaction to unfamiliar adult |
| 4 | Parent leaves room. Stranger responds to baby and offers comfort if upset. | Separation anxiety |
| 5 | Parent returns, greets baby, and offers comfort if necessary. Stranger leaves room. | Reaction to reunion |
| 6 | Parent leaves room. | Separation anxiety |
| 7 | Stranger enters room and offers comfort. | Ability to be soothed by stranger |
| 8 | Parent returns, greets baby, offers comfort if necessary, and tries to reinterest baby in toys. | Reaction to reunion |

Note: Episode 1 lasts about 30 seconds; each of the remaining episodes lasts about 3 minutes. Separation episodes are cut short if the baby becomes very upset. Reunion episodes are extended if the baby needs more time to calm down and return to play.

Source: Ainsworth et al., 1978.

experiencing favorable life conditions. And infants who move from insecurity to security typically have well-adjusted mothers with positive family and friendship ties. Perhaps many became parents before they were psychologically ready but, with social support, grew into the role. In contrast, in low-SES families with many daily stresses, attachment generally moves away from security or changes from one insecure pattern to another (Belsky et al., 1996; Vondra, Hommerding, & Shaw, 1999; Vondra et al., 2001).

These findings indicate that securely attached babies more often maintain their attachment status than insecure babies—a trend also evident in long-term assessments of attachment stability, based on follow-up interviews with adolescents and young adults (Waters et al., 2000; Weinfield, Sroufe, & Egeland, 2000). The exception is disorganized/disoriented attachment—an insecure pattern that remains highly stable (Hesse & Main, 2000; Weinfield, Whaley, & Egeland, 2004). As you will soon see, many disorganized/disoriented babies experience extremely negative caregiving, which may disrupt emotional self-regulation so severely that confused, ambivalent feelings toward parents persist for many years.

Cultural Variations

Cross-cultural evidence indicates that attachment patterns may have to be interpreted differently in certain cultures. For example, as Figure 6.3 reveals, German infants show consider-

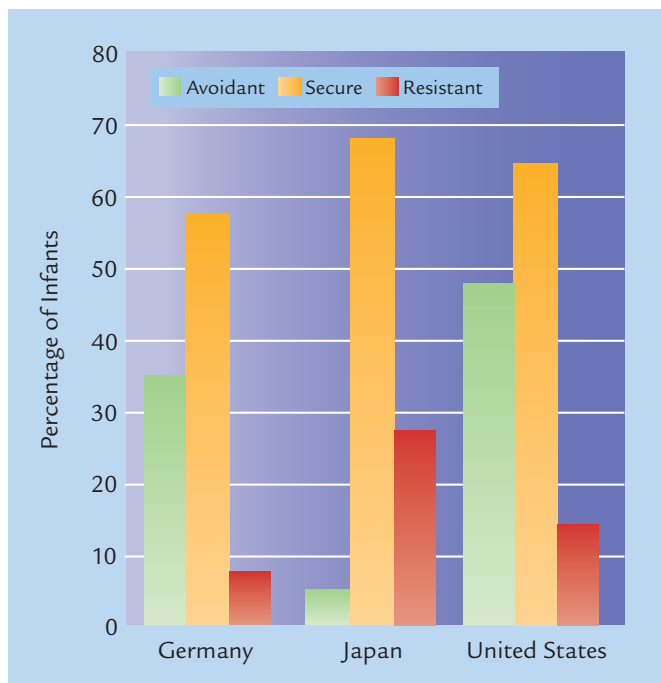


FIGURE 6.3 A cross-cultural comparison of infants' reactions in the Strange Situation. A high percentage of German babies seem avoidantly attached, whereas a substantial number of Japanese infants appear resistantly attached. Note that these responses may not reflect true insecurity. Instead, they are probably due to cultural differences in values and child-rearing practices. (Adapted from van IJzendoorn & Kroonenberg, 1988.)

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Among the Dogon people of Mali, Africa, mothers stay close to their babies and respond promptly and gently to infant distress. Dogon mothers are almost never overly stimulating or intrusive—practices linked to avoidant attachment. And in Dogon culture, none of the infants were avoidantly attached to their mothers.

ably more avoidant attachment than American babies do. But German parents value independence and encourage their infants to be nonclingy (Grossmann et al., 1985). In contrast, a study of infants of the Dogon people of Mali, Africa, revealed that none showed avoidant attachment to their mothers (True, Pisani, & Oumar, 2001). Even when grandmothers are primary caregivers (as they are with firstborn sons), Dogon mothers remain available, holding their babies close and nursing promptly in response to hunger and distress.

Japanese infants, as well, rarely show avoidant attachment (refer again to Figure 6.3). An unusually high number are resistantly attached, but this reaction may not represent true insecurity. Japanese mothers rarely leave their babies in others' care, so the Strange Situation probably creates greater stress for them than for infants who frequently experience maternal separations (Takahashi, 1990). Also, Japanese parents view the infant attention seeking that is part of resistant attachment as a normal indicator of infant dependency (Rothbaum et al., 2000b). Despite such cultural variations, the secure pattern is still the most common attachment quality in all societies studied (van IJzendoorn & Sagi, 1999).

Factors That Affect Attachment Security

What factors might influence attachment security? Researchers have looked closely at four important influences: (1) opportunity to establish a close relationship, (2) quality of caregiving, (3) the baby's characteristics, and (4) family context.

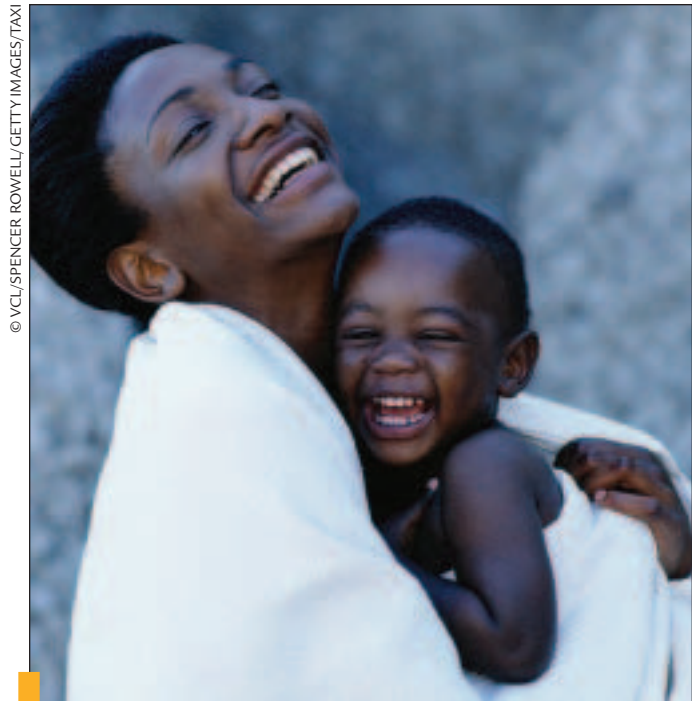
■ **Opportunity for Attachment.** What happens when a baby does not have the opportunity to establish an affectional tie to a caregiver? In a series of studies, René Spitz (1946) observed institutionalized infants whose mothers had given them up between 3 and 12 months of age. After being placed in a large ward where each shared a nurse with at least seven others, the babies lost weight and withdrew from their surroundings. If a consistent caregiver did not replace the mother, the depression deepened rapidly.

These institutionalized babies had emotional difficulties because they were prevented from forming a bond with one or a few adults (Rutter, 1996). Another study supports this conclusion. Researchers followed the development of infants in an institution with a good caregiver–child ratio and a rich selection of books and toys. However, staff turnover was so rapid that the average child had 50 caregivers by age 4½! Many of these children became “late adoptees” who were placed in homes after age 4. Most developed deep ties with their adoptive parents, indicating that a first attachment bond can develop as late as 4 to 6 years of age (Tizard & Rees, 1975).

But these youngsters were more likely to display emotional and social problems, including an excessive desire for adult attention, “overfriendliness” to unfamiliar adults and peers, and few friendships. Adopted children who spent their first eight months or more in deprived Romanian orphanages often display these same difficulties (Hodges & Tizard, 1989; O'Connor et al., 2003). These findings suggest that fully normal development depends on establishing a close, caregiver bond during the early years of life.

■ **Quality of Caregiving.** Dozens of studies report that **sensitive caregiving**—responding promptly, consistently, and appropriately to infants and holding them tenderly and carefully—is moderately related to attachment security in diverse cultures and SES groups (De Wolff & van IJzendoorn, 1997; Posada et al., 2002, 2004; van IJzendoorn et al., 2004). In contrast, insecurely attached infants tend to have mothers who engage in less physical contact, handle them awkwardly or “routinely,” and are sometimes resentful and rejecting (Ainsworth et al., 1978; Isabella, 1993; Pederson & Moran, 1996).

Also, in several studies of North American babies, a special form of communication called **interactional synchrony** separated the experiences of secure and insecure babies. It is best described as a sensitively tuned “emotional dance,” in which the caregiver responds to infant signals in a well-timed, rhythmic, appropriate fashion. In addition, both partners match emotional states, especially the positive ones (Feldman, 2003;



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This mother and baby are engaging in a sensitively tuned form of communication called interactional synchrony in which they match emotional states, especially positive ones. Interactional synchrony may support secure attachment, but it does not characterize mother–infant interaction in all cultures.

Isabella & Belsky, 1991). Earlier we saw that sensitive face-to-face play, in which interactional synchrony occurs, helps infants regulate emotion. But moderate adult–infant coordination predicts attachment security, not “tight” coordination in which the adult responds to most infant cues (Jaffe et al., 2001). Perhaps warm, sensitive caregivers use a relaxed, flexible style of communication in which they comfortably accept and repair emotional mismatches, returning to a synchronous state.

Cultures vary in the way they view sensitivity toward infants. Among the Gusii people of Kenya, for example, mothers rarely cuddle, hug, or interact playfully with their babies, although they are very responsive to their infants' needs. Yet most Gusii infants appear securely attached (LeVine et al., 1994). This suggests that security depends on attentive caregiving, not necessarily on moment-by-moment contingent interaction. Puerto Rican mothers, who highly value obedience and socially appropriate behavior, often physically direct and limit their babies' actions—a caregiving style linked to attachment security in Puerto Rican culture. Yet in many Western cultures, such physical control predicts insecurity (Carlson & Harwood, 2003).

Compared with securely attached infants, avoidant babies tend to receive overly stimulating, intrusive care. Their mothers might, for example, talk energetically to them while they are looking away or falling asleep. By avoiding the mother, these

infants try to escape from overwhelming interaction. Resistant infants often experience inconsistent care. Their mothers are unresponsive to infant signals. Yet when the baby begins to explore, these mothers interfere, shifting the infant's attention back to themselves. As a result, the baby is overly dependent as well as angry at the mother's lack of involvement (Cassidy & Berlin, 1994; Isabella & Belsky, 1991).

Highly inadequate caregiving is a powerful predictor of disruptions in attachment. Child abuse and neglect (topics we will consider in Chapter 8) are associated with all three forms of attachment insecurity. Among maltreated infants, disorganized/disoriented attachment is especially high (van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Persistently depressed mothers and parents suffering from a traumatic event, such as loss of a loved one, also tend to promote the uncertain behaviors of this pattern (Campbell et al., 2004; van IJzendoorn, 1995). Observations reveal that they often display frightening, contradictory, and unpleasant behaviors, such as looking scared, teasing the baby, holding the baby stiffly at a distance, or seeking reassurance from the upset child (Goldberg et al., 2003; Lyons-Ruth, Bronfman, & Parsons, 1999).

■ **Infant Characteristics.** Because attachment is the result of a *relationship* that builds between two partners, infant characteristics should affect how easily it is established. In Chapter 3, we saw that prematurity, birth complications, and newborn illness make caregiving more taxing. In stressed, poverty-stricken families, these difficulties are linked to attachment insecurity (Wille, 1991). But when parents have the time and patience to care for a baby with special needs and view their infants positively, at-risk newborns fare quite well in attachment security (Cox, Hopkins, & Hans, 2000; Pederson & Moran, 1995).

Babies whose temperament is emotionally reactive and difficult are more likely to develop later insecure attachments (van IJzendoorn et al., 2004; Vaughn & Bost, 1999). Again, however, caregiving is involved. In a study extending from birth to age 2, difficult infants more often had highly anxious mothers, a combination that, by the second year, often resulted in a “disharmonious relationship” characterized by both maternal insensitivity and attachment insecurity (Symons, 2001).

If children's temperaments determined attachment quality, we would expect attachment, like temperament, to be at least moderately heritable. Yet the heritability of attachment is virtually nil (O'Connor & Croft, 2001). In fact, about two-thirds of siblings establish similar attachment patterns with their parents, although the siblings often differ in temperament (Dozier et al., 2001). This suggests that most parents try to adjust their caregiving to each child's individual needs.

Why don't infant characteristics show strong relationships with attachment quality? Their influence probably depends on goodness of fit. From this perspective, *many* child attributes can lead to secure attachment as long as the caregiver behaves

sensitively (Seifer & Schiller, 1995). Interventions that teach parents to interact with difficult-to-care-for infants are highly successful in enhancing both sensitive care and attachment security (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003). But when parents' capacity is strained—by their own personalities or by stressful living conditions—then infants with illnesses, disabilities, and difficult temperaments are at risk for attachment problems.

■ **Family Circumstances.** Shortly after Timmy's birth, his parents divorced and his father moved to a distant city. Anxious and distracted, Vanessa placed 1-month-old Timmy in Ginette's child-care home and began working 50- to 60-hour weeks to make ends meet. When Vanessa stayed late at the office, a baby-sitter picked Timmy up, gave him dinner, and put him to bed. Once or twice a week, Vanessa went to get Timmy from child care. As he neared his first birthday, Vanessa noticed that unlike the other children, who reached out, crawled, or ran to their parents, Timmy ignored her.

Timmy's behavior reflects a repeated finding: Job loss, a failing marriage, and financial difficulties can undermine attachment by interfering with parental sensitivity. These stressors can also affect babies' sense of security directly, by exposing them to angry adult interactions or unfavorable child-care arrangements (Thompson & Raikes, 2003). (See the Social Issues box on pages 22–23 to find out how child care affects early emotional development.) Social support, especially assistance with parenting, reduces parental stress and fosters attachment security. Ginette's sensitivity was helpful, as was the advice Vanessa received from Ben, a psychologist. As Timmy turned 2, his relationship with his mother seemed warmer.

Parents bring to the family context their own history of attachment experiences, from which they construct internal working models that they apply to the bonds they establish with their babies. Monica, who recalled her mother as tense and preoccupied, expressed regret that they had not had a closer relationship. Is her image of parenthood likely to affect Grace's attachment security?

To assess parents' internal working models, researchers have asked them to evaluate childhood memories of attachment experiences (Main & Goldwyn, 1998). In studies in several Western nations, parents who showed objectivity and balance in discussing childhood experiences, regardless of whether they were positive or negative, tended to have securely attached infants. In contrast, parents who either dismissed the importance of early relationships or described them in angry, confused ways usually had insecurely attached babies (Slade et al., 1999; van IJzendoorn, 1995).

But we must not assume any direct transfer of parents' childhood experiences to quality of attachment with their own children. Internal working models are *reconstructed memories* affected by many factors, including relationship experiences over the life course, personality, and current life satisfaction. Longitudinal research shows that negative life events can weaken the link between an individual's own attachment security in

Social Issues

Does Child Care in Infancy Threaten Attachment Security and Later Adjustment?

Research suggests that infants placed in full-time child care before 12 months of age are more likely than infants who remain at home to display insecure attachment—especially avoidance—in the Strange Situation (Belsky, 1992, 2001). Does this mean that infants who experience daily separations from their employed parents and early placement in child care are at risk for developmental problems? Let's look closely at the evidence.

Attachment Quality. In studies reporting an association between child care and attachment quality, the rate of insecurity among child-care infants is somewhat greater than among non-child-care infants—about 36 versus 29 percent (Lamb, Sternberg, & Prodromidis, 1992). But not all investigations report that babies in child care differ in attachment quality from those cared for solely by parents (NICHD Early Child Care Research Network, 1997; Roggman

et al., 1994). The relationship between child care and emotional well-being depends on both family and child-care experiences.

Family Circumstances. We have seen that family conditions affect attachment security. Many employed women find the pressures of handling two full-time jobs—work and motherhood—stressful. Some mothers, fatigued and harried because they receive little help from the child's father, may respond less sensitively to their babies, thereby risking the infants' security (Stifter, Coulehan, & Fish, 1993). Other employed parents probably value and encourage their infants' independence. Or their babies may be unfazed by the Strange Situation because they are used to separating from their parents. In these cases, avoidance in the Strange Situation may represent healthy autonomy rather than insecurity (Clarke-Stewart, Althusen, & Goosens, 2001).

Quality and Extent of Child Care. Long periods spent in poor-quality child care may contribute to a higher rate of insecure attachment. In the U.S. National Institute of Child Health and Human Development (NICHD) Study of Early

Child Care—the largest longitudinal study to date, including more than 1,300 infants and their families—child care alone did not contribute to attachment insecurity. But when babies were exposed to combined home and child-care risk factors—insensitive caregiving at home along with insensitive caregiving in child care, long hours in child care, or more than one child-care arrangement—the rate of insecurity increased. Overall, mother-child interaction was more favorable when children attended higher-quality child care and were in child care for fewer hours (NICHD Early Child Care Research Network, 1997, 1999).

Furthermore, when the NICHD sample reached 3 years of age, a history of higher-quality child care predicted better social skills (NICHD Early Child Care Research Network, 2002b). At the same time, at age 4½ to 5, children averaging more than 30 child-care hours per week displayed more behavior problems, especially defiance, disobedience, and aggression (NICHD Early Child Care Research Network, 2003). This does not necessarily mean that child care causes behavior problems. Rather, heavy exposure to substandard care, which is widespread in the United States, may promote these

infancy and a secure internal working model in adulthood. And insecurely attached babies who become adults with insecure internal working models often have lives that, based on self-reports in adulthood, are filled with family crises (Waters et al., 2000; Weinfield, Sroufe, & Egeland, 2000).

In sum, our early rearing experiences do not destine us to become sensitive or insensitive parents. Rather, the way we view our childhoods—our ability to come to terms with negative events, to integrate new information into our working models, and to look back on our own parents in an understanding, forgiving way—is much more influential in how we rear our children than the actual history of care we received (Main, 2000).

Multiple Attachments

We have already indicated that babies develop attachments to a variety of familiar people—not just mothers but also fathers, siblings, grandparents, and professional caregivers. Although

Bowlby (1969) acknowledged the existence of multiple attachments, he believed that infants are predisposed to direct their attachment behaviors to a single special person, especially when they are distressed. When anxious or unhappy, most babies do prefer to be comforted by their mother. But this preference typically declines over the second year. And when babies are not distressed, they approach, vocalize to, and smile at both parents equally (Lamb, 1997).

■ **Fathers.** Like that of mothers, fathers' sensitive caregiving and synchronous interaction with infants predict attachment security (Lundy, 2003; van IJzendoorn et al., 2004). Nevertheless, mothers and fathers in many cultures—Australia, India, Israel, Italy, Japan, and the United States—tend to interact with babies in different ways. Mothers devote more time to physical care and expressing affection. Fathers spend more time in playful interaction (Roopnarine et al., 1990).

Mothers and fathers also play differently. Mothers more often provide toys, talk to infants, and gently engage in conven-

difficulties. In Australia, infants enrolled full-time in government-funded, high-quality child care have a higher rate of secure attachment than infants informally cared for by relatives, friends, or baby-sitters. And amount of time in child care is unrelated to behavior problems in Australian preschoolers (Love et al., 2003).

Still, some children may be particularly stressed by long child-care hours. Many infants, toddlers, and preschoolers who attend child-care centers for full days show a mild increase in saliva concentrations of the stress hormone cortisol across the day—a pattern that does not occur on days they spend at home. In one study, children rated as highly fearful by their caregivers experienced an especially sharp increase in cortisol levels (Watamura et al., 2003). Inhibited children may find the social context of child care—constantly being in the company of large numbers of peers—particularly stressful.

Conclusions. Taken together, research suggests that some infants may be at risk for attachment insecurity and adjustment problems due to inadequate child care, long hours in child care, and the joint pressures their mothers experience from full-time employment and parent-

hood. But it is inappropriate to use these findings to justify a reduction in child-care services. When family incomes are limited or mothers who want to work are forced to stay at home, children's emotional security is not promoted.

Instead, it makes sense to increase the availability of high-quality child care, to provide paid employment leave so parents can limit the hours their children spend in child care (see pages 00–00), and to educate parents about the vital role of sensitive caregiving and child-care quality in early emotional development. Return to Chapter 5, page 000, to review signs of developmentally appropriate child care for infants and toddlers. For child care to foster attachment security, the professional caregiver's relationship with the baby is vital. When caregiver-child ratios are generous, group sizes are small, and caregivers are educated about child development and child rearing, caregivers' interactions are more positive and children develop more favorably (NICHD Early Child Care Research Network, 2002a, 2000b). Child care with these characteristics can become part of an ecological system that relieves rather than intensifies parental and child stress, thereby promoting healthy attachment and development.

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At the end of her day in child care, a toddler eagerly greets her mother. High-quality child care and fewer hours in child care are associated with favorable mother-child interaction, which contributes to attachment security.

tional games like pat-a-cake and peekaboo. In contrast, fathers tend to engage in highly arousing physical play with bursts of excitement that increase as play progresses, especially with their infant sons (Yogman, 1981; Feldman, 2003). Perhaps such play helps prepare babies to venture confidently into their surrounding world (Paquette, 2004). Through a stimulating, surprising play style, fathers teach children how to approach unfamiliar situations, such as play with peers.

In cultures such as Japan's, where long work hours prevent most fathers from sharing in infant caregiving, play is a vital context in which fathers build secure attachments (Hewlett, 2004; Schwalb et al., 2004). In many Western nations, however, a strict division of parental roles—mother as caregiver, father as playmate—has changed over the past quarter century in response to women's workforce participation and to cultural valuing of gender equality. Recent surveys indicate that in dual-earner families, U.S. fathers devote 85 percent as much time, and Canadian fathers 75 percent as much time, as mothers do to children—on average, about 3½ hours per day (Sandberg & Hof-

ferth, 2001; Zuzanek, 2000; Pleck & Masciadrelli, 2004). Paternal time engaged with or accessible to children is fairly similar across SES and ethnic groups, with one exception: Hispanic fathers spend more time engaged, probably due to the particularly high value that Hispanic cultures place on family involvement (Cabrera & Garcia-Coll, 2004; Parke et al., 2004; Wilcox, 2002).

Mothers in dual-earner families tend to engage in more playful stimulation of their babies (Cox et al., 1992). When fathers are primary caregivers, they retain their arousing play style (Lamb & Oppenheim, 1989). Such highly involved fathers typically are less gender-stereotyped in their beliefs; have sympathetic, friendly personalities; often had fathers who were more involved in rearing them; and regard parenthood as an especially enriching experience (Cabrera et al., 2000; Levy-Shiff & Israelashvili, 1988).

Fathers' involvement with babies unfolds within a complex system of family attitudes and relationships. When both mothers and fathers believe that men are capable of nurturing infants, fathers devote more time to caregiving (Beitel & Parke,

Cultural Influences

The Powerful Role of Paternal Warmth in Development

Research in diverse cultures demonstrates that fathers' warmth contributes greatly to children's long-term favorable development. In studies of many societies and ethnic groups around the world, researchers coded paternal expressions of love and nurturance—evident in such behaviors as cuddling, hugging, comforting, playing, verbally expressing love, and praising the child's behavior. Fathers' affectionate involvement predicted later cognitive, emotional, and social competence as strongly, and occasionally more strongly, than did mothers' warmth (Rohner & Veneziano, 2001; Veneziano, 2003). And in Western cultures, paternal warmth protected children against a wide range of difficulties, including childhood emotional and behavior problems and adolescent substance abuse and delinquency (Grant et al., 2000; Rohner & Brothers, 1999; Tacon & Caldera, 2001).

In families where fathers devote little time to physical caregiving, they express warmth through play. In a German study, fathers' play sensitivity—accepting toddlers' play initiatives, adapting play behaviors to toddlers' capacities, and responding appropriately to toddlers' expressions of emotion—predicted a secure father-child relationship in childhood and adolescence (Grossmann et al., 2002). Through play, fathers seemed

to transfer to young children a sense of confidence about parental support, which may strengthen their capacity to master many later challenges.

What factors promote paternal warmth? Cross-cultural research reveals a consistent association between the amount of time fathers spend near infants and toddlers and their expressions of caring and affection (Rohner & Veneziano, 2001). Consider the Aka hunters and gatherers of Central Africa, where fathers spend more time in physical proximity to their babies than in any other known society. Observations reveal that Aka fathers are within arm's reach of infants more than half the day. They pick up, cuddle, and play with their babies at least five times as often as as fathers in other hunting-and-gathering societies. Why are Aka fathers so involved? The bond between Aka husband and wife is unusually cooperative and intimate. Throughout the day, couples share hunting, food preparation, and social and leisure activities. The more time Aka parents spend together, the greater the father's loving interaction with his baby (Hewlett, 1992).

In Western cultures as well, fathers in gratifying marriages spend more time with and interact more effectively with infants. In contrast, marital dissatisfaction is associated with insensitive paternal care (Grych & Clark, 1999; Lundy, 2002). Clearly mothers' and fathers' warm interactions with each other and with their babies are closely linked. But paternal warmth promotes long-term

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This Japanese father engages in the exciting, active play typical of fathers in many cultures. In both Western and non-Western nations, fathers' warmth predicts long-term favorable development. And in Western societies, it protects against a range of adjustment problems in childhood and adolescence.

favorable development, beyond the influence of maternal warmth (Rohner & Veneziano, 2001). Evidence for the power of fathers' affection, reported in virtually every culture and ethnic group studied, is reason to encourage more men to engage in nurturing care of young children.

1998). A warm marital relationship supports both parents' involvement with babies, but it is especially important for fathers (Lamb & Lewis, 2004). See the Cultural Influences box above for cross-cultural evidence documenting this conclusion—and also highlighting the powerful role of paternal warmth in children's development.

Siblings. Despite a smaller family size, 80 percent of North American and European children grow up with at least one sibling (Dunn, 2004). The arrival of a baby brother or sister is a difficult experience for most preschoolers, who, realizing that they must now share their parents' attention and affection, often become demanding, clingy, and deliberately

naughty for a time. Security of attachment also typically declines, especially for children over age 2 (old enough to feel threatened and displaced) and for those with mothers under stress (Baydar, Greek, & Brooks-Gunn, 1997; Teti et al., 1996).

Yet resentment is only one feature of a rich emotional relationship that starts to build between siblings after a baby's birth. Older children also show affection and concern—kissing and patting the baby, and calling out, “Mom, he needs you,” when the infant cries. By the end of the first year, babies typically spend much time with older siblings and are comforted by the presence of a preschool-age brother or sister during short parental absences. And in the second year, toddlers often imitate and join in play with older siblings (Barr & Hayne, 2003).



Encouraging Affectionate Ties Between Infants and Their Preschool Siblings

| Applying What We Know | Suggestion | Description |
|-----------------------|---|---|
| | Spend extra time with the older child. | To minimize the older child’s feelings of being deprived of affection and attention, set aside time to spend with her. Fathers can be especially helpful in this regard, planning special outings with the preschooler and taking over care of the baby so the mother can be with the older child. |
| | Handle sibling misbehavior with patience. | Respond patiently to the older sibling’s misbehavior and demands for attention, recognizing that these reactions are temporary. Give the preschooler opportunities to feel proud of being more grown-up than the baby. For example, encourage the older child to assist with feeding, bathing, dressing, and offering toys and show appreciation for these efforts. |
| | Discuss the baby’s wants and needs. | By helping the older sibling understand the baby’s point of view, parents can promote friendly, considerate behavior. Say, for example, “He’s so little that he just can’t wait to be fed,” or “He’s trying to reach his rattle and can’t.” |

Nevertheless, individual differences in sibling relationships emerge soon after the new baby’s arrival. Temperament plays an important role. For example, conflict is greater when one sibling is emotionally intense or highly active (Brody, Stoneman, & McCoy, 1994; Dunn, 1994). And maternal warmth toward both children is related to positive sibling interaction and to preschoolers’ support of a distressed younger sibling (Volling, 2001; Volling & Belsky, 1992). Mothers who frequently play with their young children and explain the toddler’s wants and needs to the preschool sibling foster sibling cooperation. In contrast, maternal harshness and lack of involvement are linked to antagonistic sibling relationships (Howe, Aquan-Assee, & Bukowski, 2001).

Refer to Applying What We Know above for ways to promote positive sibling relationships between babies and preschoolers. Siblings offer a rich social context in which young children learn and practice a wide range of skills, including affectionate caring, conflict resolution, and control of hostile and envious feelings.

Attachment and Later Development

According to psychoanalytic and ethological theories, the inner feelings of affection and security that result from a healthy attachment relationship support all aspects of psychological development. Consistent with this view, an extensive longitudinal study found that preschoolers who were securely attached as babies were rated by their teachers as higher in self-esteem, social skills, and empathy than were their insecurely attached counterparts. Studied again at age 11 in summer camp, children who had been secure infants continued to be more socially competent, as judged by camp counselors (Elicker, Englund, & Sroufe, 1992; Matas, Arend, & Sroufe, 1978; Shulman, Elicker, & Sroufe, 1994).

For some researchers, these findings seem to indicate that secure attachment in infancy causes better development in

later years. Yet contrary evidence exists. In other longitudinal research, secure infants sometimes developed more favorably than insecure infants, but not always (Lewis, 1997; Schneider, Atkinson, & Tardif, 2001; Stams, Juffer, & van IJzendoorn, 2002). The exception is disorganized/disoriented attachment, which is uniformly related to high hostility and aggression during the preschool and school years (Lyons-Ruth, 1996; Lyons-Ruth, Easterbrooks, & Cibelli, 1997).

What accounts for this inconsistency in findings? Mounting evidence indicates that *continuity of caregiving* determines whether attachment security is linked to later development

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The arrival of a baby brother or sister is a difficult experience for most preschoolers, but it also offers practice in expressing affectionate caring. As this boy holds and tenderly kisses his newborn sister, he begins to build a rich emotional relationship.

(Lamb et al., 1985; Thompson, 2000). Much research shows that parents who respond sensitively not just in infancy but also during later years promote many aspects of development: a more confident self-concept, more advanced emotional understanding, more favorable relationships with teachers and peers, a stronger sense of moral responsibility, and higher motivation to achieve in school (Thompson, Easterbrooks, & Padilla-Walker, 2003). In contrast, children of parents who react insensitively over a long period are at risk for a wide array of developmental difficulties.

In sum, a secure attachment in infancy launches the parent–child relationship on a positive path. But the effects of early attachment security are *conditional*—dependent on the quality of the baby’s future relationships. A child who experiences tender care in infancy but lacks sympathetic ties later is at risk for problems. In contrast, a child whose parental caregiving improves or who has other compensating ties outside the immediate family is likely to display *resilience*, or recovery from adversity (Belsky & Fearon, 2002).

As we conclude our discussion of attachment, consider the diverse factors that affect the parent–child bond: infant and parent characteristics, parents’ marital relationship, outside-the-family stressors, the availability of social supports, parents’ views of their own attachment history, and child-care arrangements. Although attachment builds within the warmth and intimacy of caregiver–infant interactions, it can be fully understood only from an ecological systems perspective (Cummings & Cummings, 2002). Return to Chapter 1, page 00, to review ecological systems theory. Notice how research confirms the contribution of each level of the environment to attachment security.

Ask Yourself

Review

What factors explain stability in attachment pattern for some children and change for others? Are these factors also involved in the link between attachment in infancy and later development? Explain.

Apply

What attachment pattern did Timmy display when Vanessa picked him up from child care? What factors probably contributed to his response?

Connect

Review research on emotional self-regulation on page 000. How do the caregiving experiences of securely attached infants promote development of emotional self-regulation?

Reflect

How would you characterize your internal working model? What factors, in addition to your relationship with your parents, might have influenced it?

Self-Development During the First Two Years

Infancy is a rich, formative period for the development of physical and social understanding. In Chapter 5, you learned that infants develop an appreciation of the permanence of objects. And in this chapter, we have seen that over the first year, infants recognize and respond appropriately to others’ emotions and distinguish familiar from unfamiliar people. That both objects and people achieve an independent, stable existence for the infant implies that knowledge of the self as a separate, permanent entity is also emerging.

Self-Awareness

After Caitlin’s bath, Carolyn often held her in front of the bathroom mirror. As early as the first few months, Caitlin smiled and returned friendly behaviors to her image. At what age did she realize that the charming baby gazing and grinning back was herself?

■ Beginnings of Self-Awareness. At birth, infants sense that they are physically distinct from their surroundings. For example, newborns display a stronger rooting reflect in response to external stimulation (an adult’s finger touching their cheek) than to self-stimulation (their own hand contacting their cheek) (Rochat & Hespos, 1997). Newborns’ remarkable capacity for *intermodal perception* (see page 000 in Chapter 4) supports the beginnings of self-awareness (Rochat, 2003). As they feel their own touch, feel and watch their limbs move, and feel and hear themselves cry, babies experience intermodal matches that differentiate their own body from surrounding bodies and objects.

Over the first few months, infants distinguish their own visual image from other stimuli, although self-awareness is still limited—expressed only in perception and action. When showed two side-by-side video images of their kicking legs, one from their own perspective (camera behind the baby) and one from an observer’s perspective (camera in front of the baby), 3-month-olds looked longer at the unfamiliar, observer’s view (Rochat, 1998). By 4 months, infants look and smile more at video images of others than at video images of themselves, indicating that they treat another person (as opposed to the self) as a social partner (Rochat & Striano, 2002).

■ Self-Recognition. During the second year, toddlers become consciously aware of the self’s physical features. Seeing their image in a mirror, they may act silly or coy, playfully experimenting with the way the self looks (Bullock & Lutkenhaus, 1990). In one study, 9- to 24-month-olds were placed in front of a mirror. Then, under the pretext of wiping the baby’s face, each mother rubbed red dye on her infant’s nose. Younger infants touched the mirror as if the red mark had nothing to do with them. But 15-month-olds rubbed their strange-looking red noses, a response indicating awareness of their unique appearance (Lewis & Brooks-Gunn, 1979).



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This 1-year-old notices the correspondence between her own movements and the movements of the image in the mirror, a cue that helps her figure out that the baby is really herself.

Around age 2, **self-recognition**—identification of the self as a physically unique being—is well under way. Children point to themselves in photos and refer to themselves by name or with a personal pronoun (“I” or “me”). But it will take another year before children grasp the self as extending over time. When shown a live video of themselves, 2- and 3-year-olds quickly reached for a Post-It note stuck on top of their head as they saw it on the screen. But when they saw the note in a video that was replayed a few minutes later, not until age 4 did children remove the note and, when asked who was on TV, say with certainty, “Me” (Povinelli, 2001).

According to many theorists, self-awareness develops as infants and toddlers increasingly realize that their own actions cause objects and people to react in predictable ways (Harter, 1998). In support of this idea, babies whose parents encourage exploration and respond sensitively to their signals tend to be advanced in self-development (Pipp, Easterbrooks, & Harmon, 1992).

As infants act on the environment, they notice effects that help them sort out self, other people, and objects (Rochat,

2001). For example, batting a mobile and seeing it swing in a pattern different from the infant’s own actions gives the baby information about the relation between self and physical world. Smiling and vocalizing at a caregiver who smiles and vocalizes back helps clarify the relation between self and social world. The contrast between these experiences helps infants build an image of the self as separate from, but vitally connected to, external reality.

■ **Self-Awareness and Early Emotional and Social Development.** Self-awareness quickly becomes a central part of children’s emotional and social lives. Recall that self-conscious emotions depend on a strengthening sense of self. Self-awareness also supports initial efforts to appreciate others’ perspectives. It is associated with the beginnings of **empathy**—the ability to understand another’s emotional state and *feel with* that person, or respond emotionally in a similar way. For example, toddlers start to give to others what they themselves find comforting—a hug, a reassuring comment, or a favorite doll or blanket (Hoffman, 2000). At the same time, they demonstrate clearer awareness of how to upset others. One 18-month-old heard her mother talking to another adult about an older sibling: “Anny is really frightened of spiders” (Dunn, 1989, p. 107). The innocent-looking toddler ran to the bedroom, returned with a toy spider, and pushed it in front of Anny’s face!

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Encouraging this toddler to help wipe up spilled milk fosters compliance and the beginnings of self-control. He joins in the clean-up task with an eager, willing spirit, suggesting that he is beginning to adopt the adult’s directive as his own.

Categorizing the Self

By the end of the second year, language becomes a powerful tool in self-development. Because it permits children to represent the self more clearly, it greatly enhances self-awareness.

Between 18 and 30 months, children develop a **categorical self** as they categorize themselves and others on the basis of age (“baby,” “boy,” or “man”), sex (“boy” or “girl”), physical characteristics (“big,” “strong”), and even goodness versus badness (“I a good girl,” “Tommy mean!”) (Stipek, Gralinski, & Kopp, 1990). Toddlers use their limited understanding of these social categories to organize their own behavior. For example, children’s ability to label their own gender is associated with a sharp rise in gender-stereotyped responses. As early as 18 months, toddlers select and play in a more involved way with toys that are stereotyped for their own gender—dolls and tea sets for girls, trucks and cars for boys. Parents then encourage these preferences by responding positively when toddlers display them (Fagot, Leinbach, & O’Boyle, 1992). As we will see in Chapter 8, gender-typed behavior increases dramatically in early childhood.

Self-Control

Self-awareness also contributes to *effortful control*, the extent to which children can inhibit impulses, manage negative emotion, and behave in socially acceptable ways. Indeed, a firmer sense of

self may underlie the increasing stability and organization of effortful control after age 2 (see page 000). To behave in a self-controlled fashion, children must have some ability to think of themselves as separate, autonomous beings who can direct their own actions. And they must have the representational and memory capacities to recall a caregiver’s directive (“Caitlin, don’t touch that light socket!”) and apply it to their own behavior.

As these capacities emerge between 12 and 18 months, toddlers first become capable of **compliance**. They show clear awareness of caregivers’ wishes and expectations and can obey simple requests and commands. And as every parent knows, they can also decide to do just the opposite! One way toddlers assert their autonomy is by resisting adult directives. But for most, opposition is far less common than compliance with an eager, willing spirit, which suggests that the child is beginning to adopt the adult’s directives as his own (Kochanska, Murray, & Harlan, 2000). Compliance quickly leads to toddlers’ first consciencelike verbalizations—for example, correcting the self by saying “No, can’t” before reaching for a treat or jumping on the sofa (Kochanska, 1993).

Researchers often study the early emergence of self-control by giving children tasks that, like the situations just mentioned, require **delay of gratification**—waiting for an appropriate time and place to engage in a tempting act. Between ages 1½ and 3, children show an increasing capacity to wait before eating a treat, opening a present, or playing with a toy (Vaughn, Kopp, & Krakow, 1984).



Helping Toddlers Develop Compliance and Self-Control

Applying What We Know

| Suggestion | Rationale |
|--|--|
| Respond to the toddler with sensitivity and encouragement. | Toddlers whose parents are sensitive and supportive are more compliant and self-controlled. |
| Provide advance notice when the toddler must stop an enjoyable activity. | Toddlers find it more difficult to stop a pleasant activity already under way than to wait before engaging in a desired action. |
| Offer many prompts and reminders. | Toddlers’ ability to remember and comply with rules is limited; they need continuous adult oversight. |
| Respond to self-controlled behavior with verbal and physical approval. | Praise and hugs reinforce appropriate behavior, increasing its likelihood of occurring again. |
| Encourage sustained attention (see Chapter 5, pages 000–000). | Development of attention is related to self-control. Children who can shift attention from a captivating stimulus and focus on a less attractive alternative are better at controlling their impulses. |
| Support language development (see Chapter 5, pages 000–000). | Early language development is related to self-control. In the second year, children begin to use language to remind themselves of adult expectations and to delay gratification. |
| Gradually increase rules in accord with the toddler’s developing capacities. | As cognition and language improve, toddlers can follow more rules related to safety, respect for people and property, family routines, manners, and simple chores. |

Children who are advanced in development of attention and language tend to be better at delaying gratification—findings that help explain why girls are typically more self-controlled than boys (Cournoyer, Solomon, & Trudel, 1998; Kochanska & Knaack, 2003). Some toddlers already use verbal and other attention-diverting techniques—talking to themselves, singing, or looking away—to keep from engaging in prohibited acts. And toddlers who experience parental warmth and gentle encouragement are advanced in self-control (Kochanska, Murray, & Harlan, 2000; Lehman et al., 2002). Such parenting seems to encourage as well as model patient, nonimpulsive behavior.

As self-control improves, parents gradually expand the rules they expect toddlers to follow, from safety and respect for property and people to family routines, manners, and responsibility for simple chores (Gralinski & Kopp, 1993). Still, toddlers' control over their own actions depends on constant parental oversight and reminders. Several prompts ("Remember, we're going to go in just a minute") and gentle insistence were usually necessary to get Caitlin to stop playing so that she and her parents could go on an errand. Applying What We Know on the previous page summarizes ways to help toddlers develop compliance and self-control.

As the second year of life drew to a close, Carolyn, Monica, and Vanessa were delighted at their children's readiness to learn

the rules of social life. As we will see in Chapter 8, advances in cognition and language, along with parental warmth and reasonable maturity demands, lead preschoolers to make tremendous strides in this area.

Ask Yourself

Review

Why is insisting that infants comply with parental directives inappropriate? What competencies are necessary for the emergence of compliance and self-control?

Apply

Len, a caregiver of 1- and 2-year-olds, wonders whether toddlers recognize themselves. List signs of self-recognition in the second year that Len can observe.

Connect

What type of parenting fosters development of emotional self-regulation, secure attachment, and self-control? Why, in each instance, is it effective?

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Summary

Erikson's Theory of Infant and Toddler Personality

What personality changes occur during Erikson's stages of basic trust versus mistrust and autonomy versus shame and doubt?

- According to Erikson, warm, responsive caregiving leads infants to resolve the psychological conflict of **basic trust versus mistrust** on the positive side. During toddlerhood, the conflict of **autonomy versus shame and doubt** is resolved favorably when parents provide appropriate guidance and reasonable choices. If children emerge from the first few years without sufficient trust and autonomy, the seeds are sown for adjustment problems.

Emotional Development

Describe changes in happiness, anger, and fear over the first year, noting the adaptive function of each.

- During the first half-year, **basic emotions** gradually become clear, well-organized signals. The **social smile** appears between 6 and 10 weeks, laughter around 3 to 4 months. Happiness strengthens the parent-child bond and both reflects and supports physical and cognitive mastery.
- Anger and fear, especially in the form of **stranger anxiety**, increase in the second half of the first year. Newly mobile babies use the familiar caregiver as a **secure base**, or point from which to explore. Sadness, while less frequent than anger, is common when care-

giver-infant communication is seriously disrupted. These reactions have survival value as infants' motor capacities improve.

Summarize changes during the first two years in understanding others' emotions, expression of self-conscious emotions, and emotional self-regulation.

- The ability to understand the feelings of others expands over the first year. Around 5 months, babies perceive facial expressions as organized patterns. Soon after, **social referencing** appears; in uncertain situations, infants actively seek emotional information from caregivers, relying especially on the caregiver's voice. By the middle of the second year, infants appreciate that others' emotional reactions may differ from their own.



- During toddlerhood, self-awareness and adult instruction provide the foundation for **self-conscious emotions**, such as guilt, shame, embarrassment, envy, and pride. Caregivers help infants with **emotional self-regulation** by relieving distress, engaging in stimulating play, and discouraging negative emotion. During the second year, growth in representation and language leads to more effective ways of regulating emotion.

Temperament and Development

What is temperament, and how is it measured?

- Children differ greatly in **temperament**—early-appearing, stable individual differences in reactivity and self-regulation. Three patterns of temperament—the **easy child**, the **difficult child**, and the **slow-to-warm-up child**—were identified in the New York Longitudinal Study. Difficult children, especially, are likely to display adjustment problems. Another model of temperament, devised by Mary Rothbart, includes **effortful control**, the ability to regulate one's reactivity.
- Temperament is assessed using parental reports, behavior ratings by others familiar with the child, and laboratory observations. A combination of laboratory and physiological measures has been used to distinguish **inhibited**, or **shy**, children from **uninhibited**, or **sociable**, children.



Discuss the role of heredity and environment in the stability of temperament, including the goodness-of-fit model.

- Stability of temperament is generally low to moderate. Temperament has a genetic foundation, but child rearing and cultural beliefs

and practices have much to do with maintaining or changing it. The **goodness-of-fit model** describes how temperament and environment work together to affect later development. Parenting practices that create a good fit with the child's temperament help difficult and shy children achieve more adaptive functioning.

Development of Attachment

Describe ethological theory of attachment and the development of attachment during the first 2 years.

- The most widely accepted perspective on development of **attachment** is **ethological theory**. It views babies as biologically prepared to contribute actively to ties established with their caregivers, which promote survival by ensuring both safety and competence.
- In early infancy, a set of built-in behaviors encourages the parent to remain close to the baby. Around 6 to 8 months, **separation anxiety** and use of the parent as a secure base indicate that a true attachment bond has formed. As representation and language develop, toddlers try to alter the parent's coming and going through requests and persuasion. Out of early caregiving experiences, children construct an **internal working model** that serves as a guide for all future close relationships.

Describe the Strange Situation and the Attachment Q-Sort, along with factors that affect attachment security.

- The **Strange Situation** is a laboratory technique for assessing the quality of attachment between 1 and 2 years. Using it, researchers have identified four attachment patterns: **secure attachment**, **avoidant attachment**, **resistant attachment**, and **disorganized/disoriented attachment**. The **Attachment Q-Sort**, an alternative method based on home observations, yields a score ranging from low to high security and is suitable for 1- to 4-year-olds.
- Securely attached babies in middle-SES families experiencing favorable life conditions more often maintain their attachment pattern than do insecure babies. An exception is the disorganized/disoriented pattern, which is highly stable. Cultural conditions must be considered in interpreting the meaning of attachment patterns.
- Attachment quality is influenced by the infant's opportunity to develop a close affectional tie with one or a few adults, **sensitive caregiving**, the fit between the baby's tem-

perament and parenting practices, and family circumstances. In some (but not all) cultures, **interactional synchrony** characterizes the experiences of securely attached babies. Parents' internal working models are good predictors of infant attachment patterns, but parents' childhood experiences do not transfer directly to quality of attachment with their own children.

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Discuss infants' attachments to fathers and siblings.

- Infants develop strong affectionate ties to fathers, whose sensitive caregiving predicts secure attachment. Fathers in a variety of cultures engage in more exciting, physical play with babies than do mothers. Early in the first year, infants begin to build rich emotional relationships with siblings that mix affection and caring with rivalry and resentment. Individual differences in the quality of sibling relationships are influenced by temperament and parenting practices.

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Describe and interpret the relationship between secure attachment in infancy and later development.

- Continuity of caregiving is the crucial factor that determines whether attachment security is linked to later development. Children can recover from an insecure attachment history if caregiving improves. Nevertheless, a secure attachment in infancy is important because it launches the parent-child relationship on a positive path.

Self-Development During the First Two Years

Describe the development of self-awareness in infancy and toddlerhood, along with the emotional and social capacities it supports.

- At birth, infants sense that they are physically distinct from their surroundings, an awareness that is promoted by their capacity for intermodal perception. Around age 2,

self-recognition—identification of the self as a physically unique being—is well under way. Two-year-olds refer to themselves by name or a personal pronoun and point to themselves in photos.

- Self-awareness leads to toddlers' first efforts to appreciate others' perspectives. It is associated with the beginnings of **empathy**, the ability to *feel with* another person. As language strengthens and toddlers compare themselves to others, between 18 and 30

months they develop a **categorical self** based on age, sex, physical characteristics, and goodness and badness.

- Self-awareness also provides the foundation for the emergence of **compliance** between 12 and 18 months, and an increasing capacity for **delay of gratification** between ages 1½ and 3. Children who are advanced in development of attention and language and who have warm, encouraging parents tend to be more self-controlled.

Important Terms and Concepts

attachment (p. 16)
Attachment Q-Sort (p. 18)
autonomy versus shame and doubt (p. 4)
avoidant attachment (p. 18)
basic emotions (p. 5)
basic trust versus mistrust (p. 4)
categorical self (p. 28)
compliance (p. 28)
delay of gratification (p. 28)
difficult child (p. 10)
disorganized/disoriented attachment (p. 18)

easy child (p. 10)
effortful control (p. 11)
emotional self-regulation (p. 9)
empathy (p. 27)
ethological theory of attachment (p. 16)
goodness-of-fit model (p. 14)
inhibited, or shy, child (p. 11)
interactional synchrony (p. 20)
internal working model (p. 17)
resistant attachment (p. 18)
secure attachment (p. 18)
secure base (p. 8)

self-conscious emotions (p. 8)
self-recognition (p. 27)
sensitive caregiving (p. 20)
separation anxiety (p. 17)
slow-to-warm-up child (p. 10)
social referencing (p. 8)
social smile (p. 6)
Strange Situation (p. 17)
stranger anxiety (p. 6)
temperament (p. 10)
uninhibited, or sociable, child (p. 11)